The OIL WEEKLY

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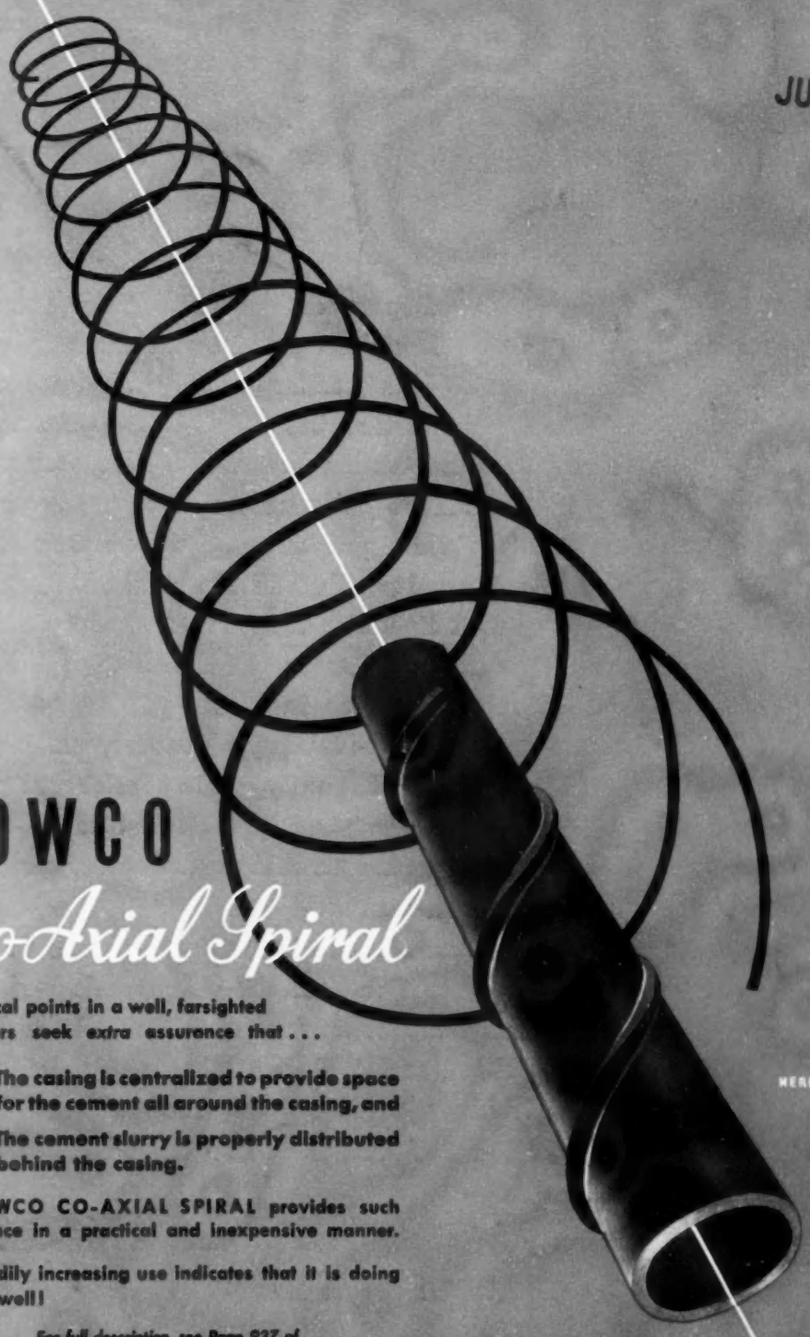
THE WEEK'S NEWS INTERPRETED

JUL 2 1940



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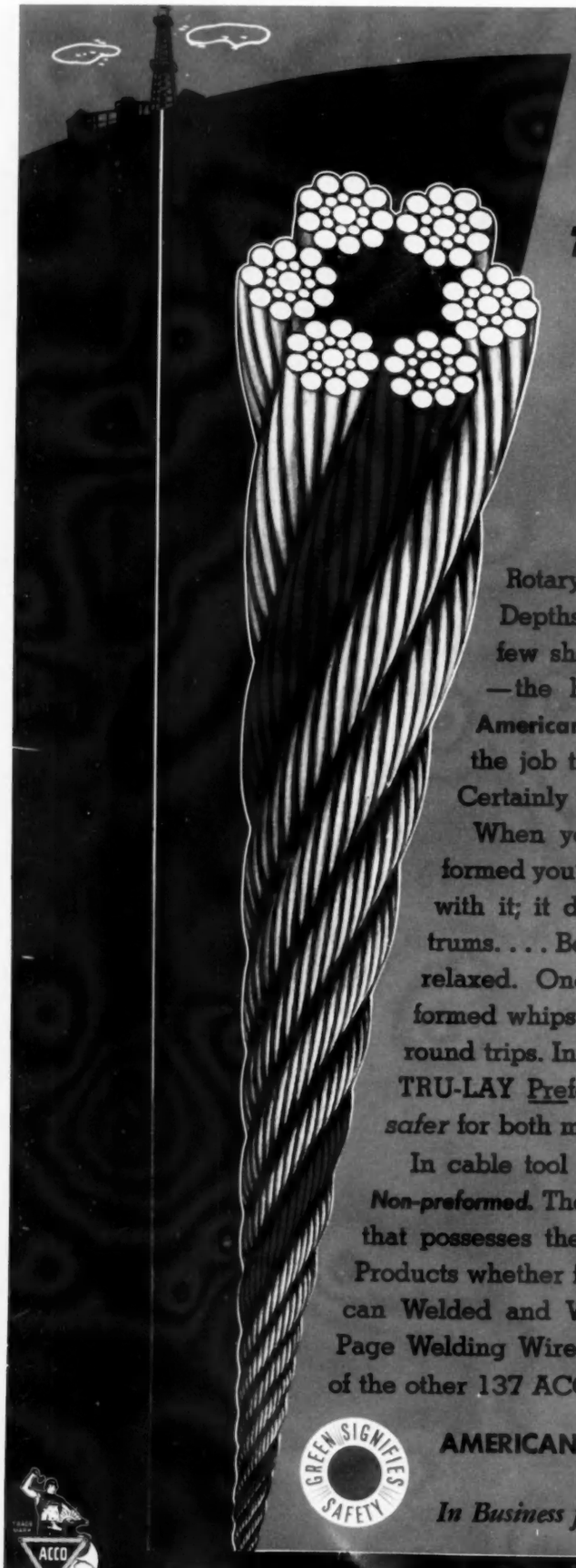

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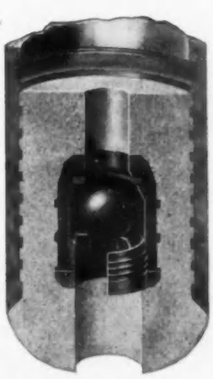

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GAS-LIFT PRINCIPLES AND PRACTICES

By **S. F. SHAW, E. M.**
Consulting Engineer

This book is largely based on a series of lectures on gas lift delivered before the Petroleum Engineering Department of the Agricultural and Mechanical College of Texas on November 9th and 10th, 1939, by the author as special lecturer of the Department of Petroleum Engineering.

A history of the development of the air-gas lift is given, covering operations in air and gas-lift, and noting some of the inventions that have been patented in connection with this work.

The performance data in the numerous tables are selected from some 15,000 actual field tests made to determine the best rates at which to produce a well, these tests being made by the author or under his supervision, in many fields of the United States and foreign countries.

The principles controlling operation of the gas-lift are discussed, curves and formulas are given for determining the quantity of gas required to lift liquids, and curves and formulas are given for determining the capacity of various sizes of pipes in certain fields, and methods are discussed for determining similar formulas and curves in new oil fields.

A lengthy discussion of the selection of compressors and building of plants suitable for handling gas-lift operations is given.

CONTENTS:

History and Invention; General Principles Controlling Gas-Lift Operations; Lifting Efficiency; Lift and Submergence; Pressure; The Eductor; Straight or Continuous Gas-Lift; Combination Gas-Lift Flow; Intermittent Gas-Lift Flow; Compressor Plant Installations; Gas-Lift Practices in Various Fields.

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Looking Ahead

WITH THE EDITOR

GROUP SAFETY PROGRAMS have been advocated by various sources, including THE OIL WEEKLY, as the most logical means for smaller oil companies to reap the benefits obtainable through such work.

Unfortunately, in the past there has appeared to be too few actual examples of what cooperative efforts of this nature might accomplish. However, our editorial staff has discovered a group safety program being carried on by 30 California oil operators that has been in existence a sufficient time to provide records of the progress being made. Naturally, we jumped at the opportunity of presenting "concrete" data on the work and result of this cooperative effort, which will show the wonderful opportunity that awaits enterprising operators.

Not the least of the results obtained has been two reductions in the rate paid for oil industry workmen's compensation insurance in California, which has brought it below the rates charged in most other active oil producing states. Rates in 1939 were approximately 20 percent lower than in 1937. Here is a direct financial gain.

These insurance rate reductions were the result of reduced accident frequencies. In addition, however, this group has realized other benefits, such as greater efficiency in operations from a number of practical operating suggestions that have been developed at meetings of foremen.

This valuable article, which is to appear in an early issue, besides showing the successful record of the organization by presenting data on rate of accidents and reductions in insurance rates, also will present data on a few of the practical operating suggestions that have been achieved.

PETROLEUM-BASE SYNTHETIC RUBBER is the newest achievement of science that affords sizeable new markets for the oil industry. Since the first of the year a large list of methods to make synthetic rubber and rubber-like materials from products produced in the United States has been announced.

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The OIL WEEKLY, Published every Monday. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
9–13	American Chemical Society, Detroit.
18–20	National Petroleum Association, Atlantic City, N. J.
OCT.	
7–10	American Gas Association Atlantic City, N. J.
7–11	National Safety Congress and Exposition, Chicago.
16–18	Independent Petroleum Association of America, Dallas.
17–18	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Los Angeles.
31–Nov. 2	Texas Mid-Continent Oil & Gas Association, Ft. Worth.
NOV.	
1	California Natural Gasoline Association, Los Angeles.
11–15	American Petroleum Institute, Chicago.
1941	
APR.	
2– 4	American Association of Petroleum Geologists, Houston.
24–25	National Petroleum Association, Semi-Annual Meeting, Cleveland.

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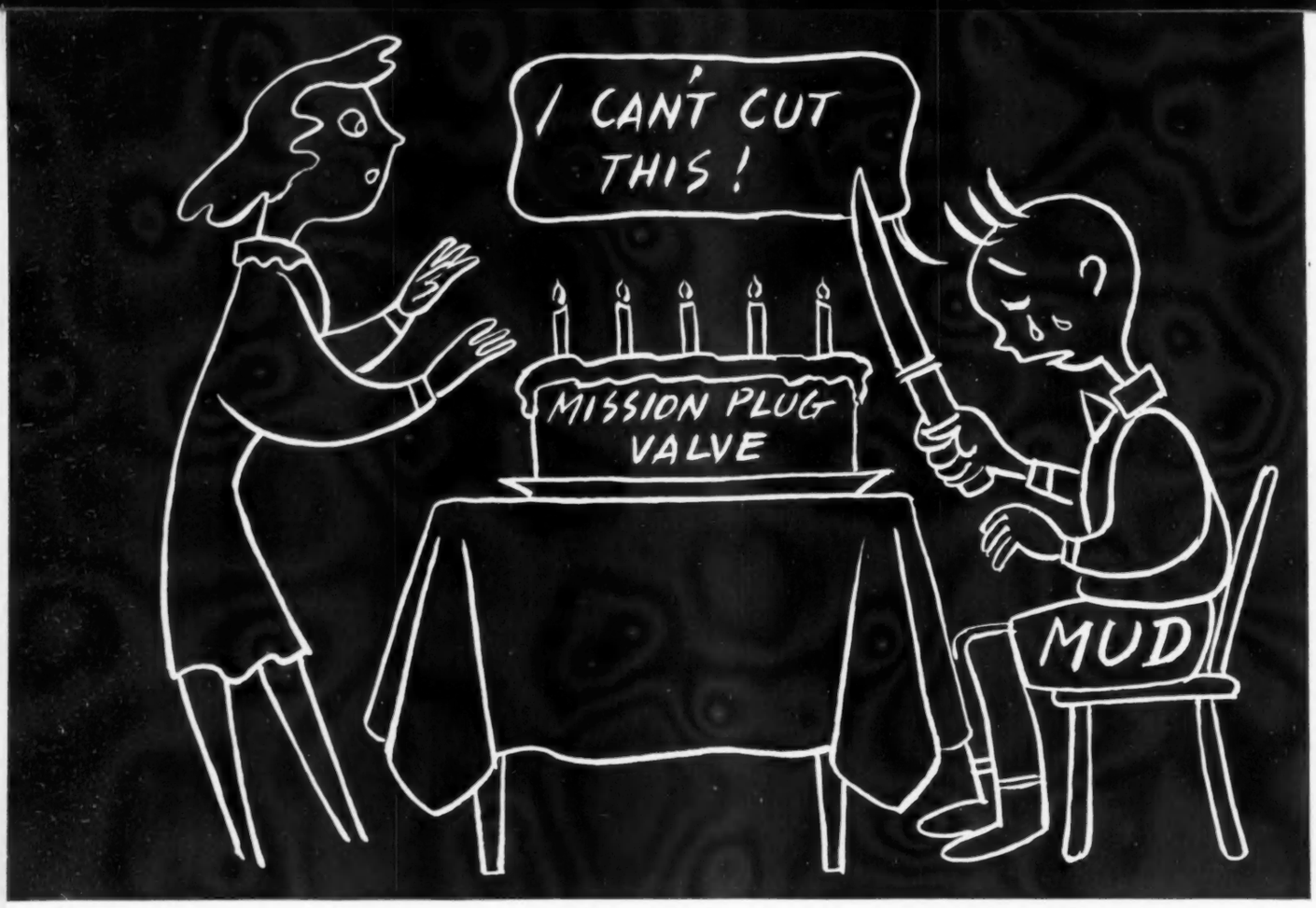

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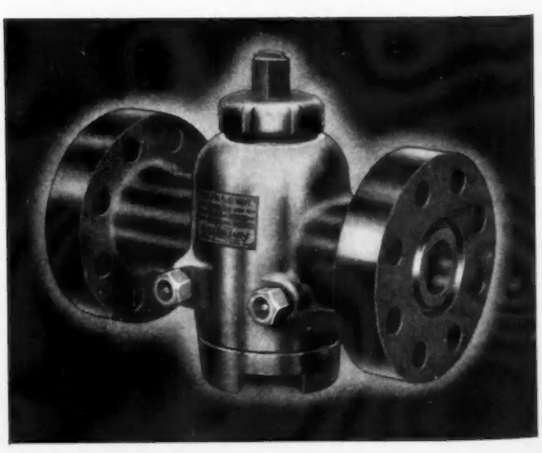

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THE OIL WEEKLY

JULY 1, 1940

VOLUME 98 NUMBER 4

The Week's Panorama

UNITED STATES industrial activity has shown some recovery in May and June, after having declined materially in the first four months of the year. And some business forecasters expect the national defense program to extend the recovery until the all-time record activity of last December is approached, although others do not attempt to see very far into the war-clouded future.

• • • The Federal Reserve Board index of industrial production rose in May to 105 percent of the 1923-1925 average, from 102 in April, lowest point touched in the early-1940 letdown. The index reached a record high of 128 last December, but then declined to 119 in January, 109 in February, 103 in March, and 102 in April.

At 105 in May, 1940, the index was 14 percent higher than a year previously, having averaged 92 in May, 1939.

The Federal Reserve Board, in announcing the May, 1940, figure, stated that industrial activity increased considerably further in the first half of June.

• • • The current high rates of industrial production reflect brisk activity in war-related industries, such as the steel, machinery, aircraft, shipbuilding, wood pulp, and chemical industries. But also reflected are high levels of activity in some industries not directly affected by the war, including petroleum, lumber, meat packing, and rayon. New records are being established in demand for most petroleum products.

• • • The Bureau of Agricultural Economics, usually accurate in its business forecasts, has predicted that industrial activity would be higher in the latter half of this year than in the first half, provided the European war continued active. The agency stated, however, that early termination of the fighting might bring a slowing down of activity until real effects of the national defense program began to be felt. The report was before the German-French armistice.

• • • Having recovered appreciably from the set-back caused by the intensification of the European war, retail trade has been greater in the past few weeks than in the corresponding weeks of last year. Particularly impressive gains lately in the highly industrialized districts of the East are regarded as reflecting increased employment in connection with the national defense program.

• • • Automobile manufacturers are of the opinion that domestic demand for cars and trucks would increase sharply from present favorable levels in response to any promising developments. This view has been strengthened by the indications that retail sales of new motor vehicles in the past few weeks have been nearly 20 percent higher than in the corresponding weeks last year, as the national defense program has caused expectations of more business and more jobs.

• • • The favorable outlook for automobile sales is encouraging for the oil industry, offering the promise of continued good demand for gasoline and lubricants. So far this year, total demand for gasoline has been exceeding all previous records, despite sharply curtailed export business; and lubricants have been purchased in record quantities by foreign as well as domestic buyers, although the recent war developments have greatly clouded the whole export picture.

• • • Higher taxes on oils and on oil companies' incomes were authorized when President Roosevelt June 25 signed the bill designed to raise over $4,500,000,000 in five years to apply on the cost of the defense program authorized by Congress.

The federal tax on gasoline was raised, effective July 1, from 1 to 1½ cents a gallon, and that on lubricating oil from 4 to 4½ cents a gallon.

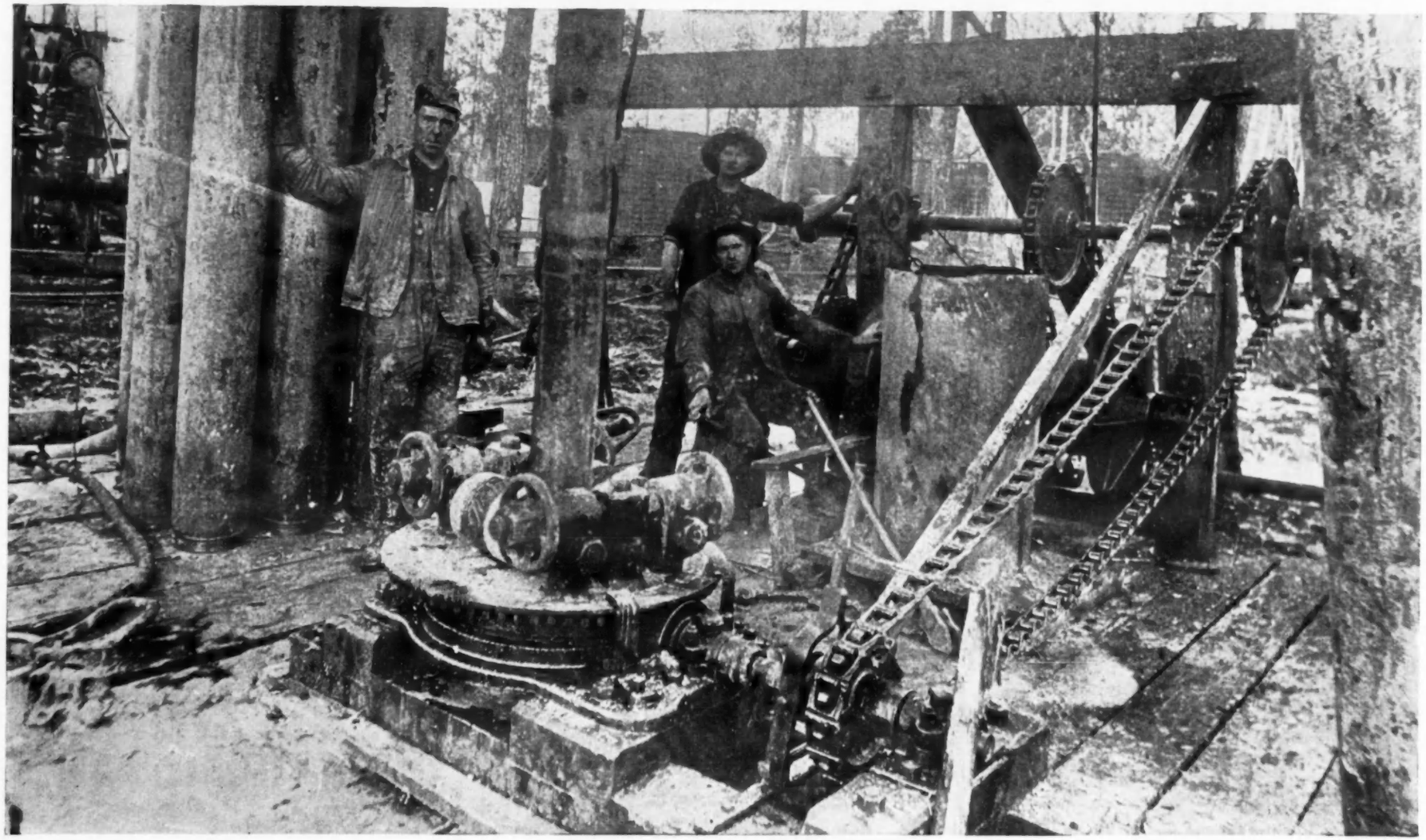
The excise taxes were raised from 3 to 3½ percent of sale value on passenger cars; from 2 to 2½ percent of sale value on trucks and automobile parts; from 2¼ to 2½ cents per pound on tires; from 4 to 4½ cents a pound on inner tubes.

To each bracket of the corporation tax, 1 percent extra was added, the rate for companies with income of over $25,000 having been raised from 18 to 19 percent.

On top of all old and new income tax levies, a 10 percent super tax was added.

• • • Under the new tax measure, over 2,000,000 persons will be added to those paying income taxes.

Aside from increases in the rates on incomes, profits, sales, and amusement, the law will raise the gift and inheritance taxes.



DRILLING FOR OIL THIRTY-FIVE YEARS AGO

Drillers 35 years ago made hole without many of today's efficient aids to drilling, as this view from Sour Lake in 1905 shows. The final drive to the rotary is open-end link conveyor chain, either malleable or cast, without pins, bushings, rollers or other means of distributing wear. The rotary table "clutch" is a plain sliding jaw device, mounted and operated far from the driller's stand. The view shows a fishing job, washing over with 8-inch casing. The "slips" on the rotary for handling this pipe are ingenious, if somewhat large. The hooked straps maintaining engagement between rotary gear and pinion are simple, although far from frictionless. Other details which measure progress by comparison with today's units are the drawworks mounting, brace between rotary drive and headpost and, especially, the bulky sheet iron stove blanking from view most of the drawworks. The driller is R. Y. Smith, now president of R. Y. Smith Oil Company of Houston. The OIL WEEKLY would be glad to hear from old-timers who can identify the other two men in the picture.

Louisiana's New Regime Plans Equitable Oil Regulation

By R. H. TATE

THROUGH the medium of an exclusive interview with B. A. Hardey, acting commissioner of conservation for Louisiana, THE OIL WEEKLY has attempted to ascertain for its readers the policies and plans of the new administration which has just taken over the government in the state insofar as they affect the oil industry.

The Conservation Department is slated for perhaps the most sweeping changes in personnel and general operating policy of any other portion of Louisiana's governmental structure. In the projected reorganization state officials will attempt to achieve a maximum of cooperative efficiency with operating oil companies interested in developing the state's mineral resources.

Cognizant of the chaotic conditions which have prevailed for most of the period since Louisiana ascended to a position important among oil-producing states the present tendency is to advance slowly and weigh each step carefully rather than introduce hastily-drawn legislative acts which may sooner or later cause additional complications.

An indication of the general nature of the new program is to be seen in the incumbent commissioner himself. Drafted for the position by Governor Sam Jones, Hardey is to serve for an indefinite tenure which will expire when the department is functioning smoothly and along lines considered desirable to the new regime. A man widely known in the oil industry and generally adjudged to be the possessor of keen insight into the problems with which he is faced, his choice has already proven a popular one with the industry.

Probably the most important resolve of the Sam Jones administration is that henceforward affairs pertaining to the development of the industry in the state are to be conducted on a completely impersonal basis, which is planned to result in all operators competing on the same footing to exploit this part of the state's resources in as efficient a manner as possible. Officials are firm in their declaration that only by this method can a program satisfactory to both state and operators evolve.

Pursuant thereto, Louisiana will henceforward hold public hearings at regular intervals the purpose of which will be to afford the opportunity for all operators and individuals to state their grievances or suggestions. Testimony weighed carefully by the authorities, and a decision rendered that will be calculated to solve the problem with due attention to the interests of all concerned.

The matter of proration is being considered carefully and while it will be subjected to many varied and technical adjustments depending on fields, sands, etc., the commissioner states that in general the production of Louisiana will be held closely to recommendations of the Bureau of Mines estimates.

Proration, in the opinion of the incumbent commissioner, is a matter that must be taken somewhat philosophically. It is here to stay and any marked deviation from intelligent and careful observation of the demands of consumption can have but one result and that which is an altogther obvious one. Proration in itself may be an unpleasant evil, but the evils growing out of its abuse are far worse and certainly can only be avoided by the application of conservative policies.

One of the principal concerns of the department is to decide on a course of action that will yield a maximum return on the large state-owned lands, which figure in much of the state's oil production and in view of the possibilities of new strikes in the marginal areas along the coast probably will become increasingly of interest.

Leasing Change Likely

The present officials believe that some laxity has been exercised in the past by those responsible for the leasing of the state domain. It is to this particular phase which the department will henceforward pay particular attention, by which policy they hope to increase the state's revenues from production as well as from the rental and bonus payment on state leases. A number of plans are receiving attention in this connection.

One of the most prominent and one which is likely to be acted upon is that providing for the conduct of preliminary and general geophysical work where feasible. Realizing, however, that many types of exploratory search would be prohibitive, it is likely that only general reconnaissance work em-

LOUISIANA'S allowables in the future will be set on a bi-monthly basis following statewide hearings, instead of monthly as has been the practice in the past, Governor Sam H. Jones announced in Baton Rouge June 21, following conferences with Federal Department of the Interior officials and Conservation Commissioner B. A. Hardey.

"Two representatives of Harold L. Ickes, secretary of the Department of the Interior, conferred with Hardey and Murphy and asked us to issue oil allowables under the conservation department so that the Connally act would be enforceable," he said.

"We decided on bi-monthly hearings to fix proration orders as the best method," he said, and added that in the future there would be no special orders granted as was the custom in prior administrations.

During recent state scandals, it was brought out by O. John Rogge, that they found oil run in excess of allowable figures, but they said that state orders were so worded that violations did not come within the Connally Hot Oil Act; and thus, no federal action was possible.

ploying one of the more inexpensive methods will be employed. Hardey explained that even only general knowledge of what might underlie any particular state tract would very probably pay for the cost of ascertaining the nature of the situation many times over, and certainly would be an improvement on acting in total darkness.

In the opinion of the officials, revenue from the leasing of state lands in the past frequently has been ridiculously low in many cases, and they believe that the application of some such measures as outlined above will tend to justify the efforts involved. It also is viewed as a possibility, but has not yet been adopted as a hard and fast rule, that geophysical data obtained as result of company work either on state lands or in their immediate vicinity be made available to the Department of Conservation. Should this plan be adopted it goes without saying that department officials would view such information as highly confidential and would treat it accordingly. Although there are some defects in this plan, it is obvious that it in many respects is the most desirable from the standpoint of state interests; principally because it would relieve the latter of any cost accruing from geophysical work contracted for by the state itself. It is not unlikely that the department may eventually adopt a plan embracing a combination of the two ideas, using one as a check against the other.

As to the actual awarding of leases in the future, it is not believed that any startling departure will be made from the method which has been employed in the past, namely that of competitive bidding. However, Hardey points out, the bidding will be definitely competitive and leases will be awarded to the operators offering the most favorable proposition. In the past it is understood that high bidders in some instances failed to be awarded the lease for which they had bid. This, it is understood, will not reoccur in future auctions of state leases.

Recently there was placed on the legislative calendar at Baton Rouge, a bill providing for the appropriation of $2,000,000 for the drilling and operating expenses to allow the state to carry on development of its own fee lands. Subsequently, at the request of Governor Jones and Commissioner Hardey, another bill was proposed that is to take the place of the original bill and which apparently writes finis to the matter of the state drilling its own wells, a plan which has of late aroused much general comment.

The new bill provides that the state will retain proportionate acreage in any leases granted to a successful bidder in checkerboard fashion, such as alternate forties or quarter sections. The move on the part of Governor Jones and Commissioner Hardey to kill the drilling bill and thus remove the state from active participation in actual operations conforms with Hardey's statements anent the subject in this interview.

On being queried as to the possibilities of the state entering on a program of development of its own lands Hardey definitely stated that he would not go on record as favoring such a plan which he considered not within the province of the state government. "Louisiana will receive every dollar from its fee lands that logical and careful administration of the properties can bring, however, I cannot favor any plan calling for the state to drill its own wells. This, in my opinion, involves too much risk in which the taxpayers' money is involved and consequently I do not believe that the state of Louisiana will be in the oil business other than in the role of royalty owner," stated Hardey.

However, both Governor Jones and Commissioner Hardey strongly favor the checkerboard system which they believe will result in a material increase from the leasing of such lands for development. In view of the official approval of the bill in its present form, there is little chance that it will fail to pass both houses and thus is an innovation with which operators in the state will probably have to reckon.

Another phase of the state land question is likely to be dealt with soon in some form or another by the department. That is in regard to large leases which have come into production and where hundreds to thousands of acres of lands are held by virtue of production in lieu of rental payments. Some provision is expected to be made that will compel operators to more intensively develop these properties, in conformity with the proration and spacing allowables, however. In short, it is probable that in the future when leases are awarded provisions will be made to restrict more stringently the number of acres to be held by production. Failure to develop the lease properly resulting in forfeiture of the lessee's rights on acreage over and above that portion not being developed. Some variation of this providing for retroactive application may be seen also.

It is apparent from proposed legislation and general opinion that in the future Louisiana's fee lands will be dealt with more in accordance with the manner of a corporate landowning organization encompassing administrative tacts of more detailed nature than has heretofore been the case. The background of both the governor and the commissioner qualify each particularly for this task, as the former has had experience as an attorney whose services were highly regarded by many companies operating in the state. The commissioner has held positions with a number of oil companies and in recent years has been an independent operator.

The question of whether or not the state will attempt to set aside leases granted by the old administration under what may be regarded as questionable conditions and procedures was avoided by Commissioner Hardey. This, he explained, fell under the authority of the attorney general's office and therefore the conservation department would in itself instigate no such action. However, it was further explained that in any of the hot-oil investigations or other litigation affecting the industry the entire records and cooperation of the department were available together with any counsel that might be sought by the attorney general's office.

In this connection it is also a matter of policy in the future for all records pertaining to production, taxes and sand records to be available to the public when such information is desired. The old secretive methods of the department are passe. However, this does not mean that the idly curious have complete access to the department's files. Actually, their availability will be confined to only those persons or companies who have direct and immediate interest in such matters.

Among some of the other abuses in the department and the state as a whole that have been abolished is one that pertains to the supply industry. The state is not and shall not enter into the sale of oil field supplies in any shape, form or fash-

ion in the future. Henceforward, is the official statement, it is a matter of complete indifference to official Louisiana as to where any operator chooses to purchase his supplies. Failure to make these purchases from any one particular source will not as has sometimes allegedly happened in the past, bring down reprisals in the way of discriminatory regulations affecting an operator's activities.

The speculation by employes of the department in royalties or leases is not to be countenanced. Governor Jones himself has said that all employes in every department of the state must give a financial statement upon entering the employ of the state and upon ending their tour of duty. Evidence that any employe has violated the rule pertaining to speculative activities will automatically bring to a close his association with the state and probable investigation.

Insofar as general operating rules and regulations in the state, no sweeping changes are anticipated. It is the official opinion that the repudiated regime had sufficient organization in the department to satisfactorily control and take care of the industry in the state. That the department was subjected to abuses and unethical practices was a matter of personalities rather than organic inefficiency. In the future the department will see to it that the rules and regulations are interpreted and applied properly, and it is officialdom's desire to encourage the entry of new interests into the state to compete on equal footing with others already there.

In one matter particularly is the present commissioner emphatic. In instances where new pools are opened the state will not adopt the policy of waiting for situations involving spacing to arise before acting to alleviate any such situation that may develop that is in opposition to the fundamental rules of conservation and efficiency.

As soon as a new discovery is reported, a hearing will be called immediately and landowners, operators and state officials will adopt a spacing and proration program for the development of the new field that will probably be a compromise of all conflicting theories and wishes, the purpose of which will be to provide for the maximum efficiency in operating and developing the field. Thus, by setting out a clear and practical program that leaves nothing to chance or

B. A. HARDEY

"Drafted for an indefinite tenure," he has been placed in charge of the Louisiana Conservation Department with the avowed purpose of correcting chaotic conditions and abuses which long have been the source of scandal in the state—both in administration of oil flow regulations and leasing of the public domain.

the future, development will follow the orderly pattern that has been adopted.

Another point in which there is to be deviation is the matter of allowables set for various fields by the state. In the past few years the department has promulgated from time to time, more lately, once a month, the allowables for the coming month. Thereafter there is understood to have existed some laxity in properly enforcing the order. The new regime promises that orders will be definite and that any infractions of the ruling for a certain period will be dealt with sternly when and if the over production is discovered as it most certainly will be.

Violations of this allowable in the past have figured in recent "scandal" litigation which has been taking place in the state, but because of the general elasticity of the monthly allowable ruling in the past little has come of the court proceedings. However, the incumbent administration is definite in its stand that campaign statements promising to clear up this and other situations in the oil industry of Louisiana were not empty statements but declarations of a policy that will hold for at least the ensuing four years.

So, in viewing the Louisiana situation, it may be generally taken for granted that while some of the bonanza characteristics that have prevailed are ended, yet a more desirable situation has developed. All operators may be assured of fair and impersonal restrictive rulings in connection with their activities and while there will be no favors granted, it will be reassuring to know that all are being meted out the same treatment.

By following the dictates of general conservative operating practices, the newcomer and the old as well will find the department of conservation under the administration of Governor Sam Jones, Commissioner B. A. Hardey or his successor anxious to cooperate in any way possible.

Permian Basin Present Situation and Outlook

By H. C. WIESS, President, Humble Oil & Refining Company

A PROPER understanding of the present situation and outlook of the Permian Basin necessitates some knowledge of the experience through which West Texas has passed in establishing its place in the state and national crude oil markets and a consideration of problems now being faced.

Crude production in the Permian Basin began to appear in quantity just as the oil industry was entering upon a new day. The days of $2.00 oil were being brought to an end by the deluge of crude which resulted from the development of improved methods and organized efforts in finding oil. Permian Basin production increased very rapidly in the five year period beginning in 1925, from a total of less than 5000 barrels a day to its all-time high at the end of the period in 1929 of nearly 370,000 barrels a day. At this time, West Texas production equalled 45 percent of the total for Texas and the participation of the state in the national production during this five-year period had increased from 20 percent to 30 percent. During this period crude oil production was growing rapidly in all producing areas in the United States. Large amounts of crude and products were going into storage, the accumulation exceeding 150 million barrels. This was induced in part by the prevailing optimism of the late twenties and by the fact that the industry generally had not come to realize that improved technique in oil finding and concerted efforts of organization and capital would continue to find and produce oil more rapidly than could be consumed or economically stored. Except for these facts, the industry would never have added to storage the enormous volume of oil which remained to plague it for a decade.

The dawn of the new day was conclusively demonstrated a year or two later with a veritable flood of oil thrust into the market by the development of the East Texas field, the effect of which on West Texas was profound. Within the succeeding five-year period ending with 1934, during which period East Texas reached its peak, West Texas production declined from 365,000 barrels a day to 132,000 barrels a day, and its participation in the state's production dropped from 45 percent to 13 percent. While this decline in West Texas production occurred, production for the state increased 35 percent. Those of you who witnessed these occurrences recall how trying the times were.

The third five-year period beginning in 1935 and ending in 1939 marked an increase in West Texas production from 132,000 barrels to 215,000 barrels a day and growth in its participation in the increasing state's production from 13 percent to more than 16 percent.

During the whole 15-year period under review, drilling and developing of the Permian Basin had continued at a substantial rate and potential capacity to produce oil increased each year. It is natural for one to inquire why so drastic a curtailment of West Texas production took place. It seems to me that the history of the period demonstrates that the answer to that question may be simply and clearly stated by saying that this is accounted for by competition with other crudes. The pressure of huge reserves for an outlet was the primary factor which influenced the relative market position of East and West Texas crudes. This pressure reflected itself in the relative prices, which, together with the comparative qualities of these crudes, determined the relative desirability of each. The change in market position of East Texas and West Texas came about because of economic forces and not from any lack of access to markets by either crude. Crudes produced in both East Texas and West Texas have had full and free access to the markets.

H. C. WIESS

in discussing current problems confronting West Texas operators, ably presents an interesting review of the situation also existing in many other areas of the nation. He asserts that continuation of an active drilling campaign during a time when market demand has failed to gain appreciably has resulted in a steady decline in per well allowables until a much longer investment payout rate has been created.

He urges operators to consider carefully the rate and circumstances under which additional drilling investments should be made, and advocates the "necessity for wider spacing and careful development generally in order to insure profitable operations."

The accompanying article constitutes a speech delivered by Mr. Wiess at the annual meeting of the Permian Basin Association at Odessa, Texas, on June 21, 1940

The Permian Basin area is served by nine trunk pipe lines, which had a capacity when they were built equal to almost twice the amount of oil that has been moved during the last 10 years. The pipe line outlet from East Texas and most other producing areas in Texas likewise has been well in excess of production.

Under these circumstances, it was inevitable that the relative price of various crudes in Texas should influence their market outlet. The average price of West Texas crude in 1926 was $1.29 a barrel, which was 60 cents a barrel below the price of Mid-Continent crude of similar gravity. Toward the end of that year all domestic crude prices declined 50 to 60 cents a barrel. This was the natural consequence resulting from the pressure of supplies of crude for market, not only in Texas but elsewhere, and of the low cost resulting from improved technique in drilling and producing operations. During the past 15 years, the differential in the price of West Texas crude below Mid-Continent crude of similar gravity has declined from a maximum of 60 cents a barrel in 1926 to 25 cents at present. Since the advent of East Texas the crude from this field, rather than other Mid-Continent crudes, has been the principal competitor of West Texas crude and has vied with it for a place in the competitive market. During the past five years, since the market for East Texas crude has ceased its violent fluctuation, the differential in price between East Texas and West Texas crude has varied as much as 10 to 15 cents a barrel. Sometimes East Texas crude has seemed higher priced than West Texas, relative to the intrinsic value of each crude expressed in terms of product prices; at other times the reverse has been true. The market has become increasingly sensitive in recent years and it would not have been possible over any considerable period to make a serious mistake in the relative prices of these crudes. Occasionally the price of crude in a given area may get out of line with the general price structure. This is to the disadvantage of the area, whether the price is relatively too high or too low. If the price of crude in any area is relatively high as compared with the general level of crude oil prices, the market demand for that crude decreases, because it is replaced by the cheaper crudes, and as a consequence of the smaller volume the return is diminished. If the price is unduly low in relation to that of other crudes, income decreases, excessive quantities go into the market, and the whole price structure is endangered. It appears that the free competition of West Texas crude with that from East Texas and other areas has found and established price differentials which represent the relative market values of these crudes.

Current Problems

Now that we have reviewed briefly the development of the Permian Basin in the past, we can turn to a consideration of the current problems facing this area. The West Texas area now has about 10,000 producing wells drilled on 10, 20, and 40-acre spacing. New Mexico has 3000 wells drilled on 40-acre spacing. In this connection, it is significant to note that the developed acreage in West Texas is twice that of New Mexico, whereas the number of wells in West Texas is more than three times as great. The production from these areas is in direct relation to their developed acreage, the production in West Texas being slightly in excess of 200,000 barrels per day, or an average of 21 barrels per well, compared to production in New Mexico slightly in excess of 100,000 barrels per day, or an average of 33 barrels per well. Both of these areas still have a considerable amount of proved but undeveloped acreage. West Texas has 156,000 proved acres which remain to be developed and New Mexico has 52,000 proved but undeveloped acres.

The figures which we have just reviewed emphasize the fact that the most serious problem of development in the Permian Basin is in relation to the West Texas reserves. It would require about 4000 wells to develop completely the acreage in West Texas on 40-acre spacing and twice that number on 20-acre spacing. This would represent an increase of from 40 to 80 percent in the number of wells drilled and the investment in West Texas. At the present rate of development in West Texas, this increase in the number of producing wells would probably take place in the next five years. Last year there were drilled in West Texas nearly 1700 oil wells, and so far this year drilling activity is 17 percent higher. If this pace should be continued, West Texas would add nearly 8000 producing wells during the next five years to the 10,000 which it has now. Although it is difficult to estimate the amount of money being invested in this development currently because of the wide range of drilling costs in the area, it is probable that the average investment is between 20 and 30 thousand dollars per well, which would represent an investment of from 35 to 50 million dollars per year. This money is being invested in the industry by many different individuals and companies, some of them operating on a large financial backing while others are carrying on with borrowed money, and under diverse conditions of recovery per acre, spacing, and allowables, so that it is not easy to evaluate the variations which exist in the returns on their investments. In general, however, it can probably be said that the rate of return on the wells drilled within recent years in West Texas has been only a moderately good one. There was a time in the past, when there were relatively few wells in relation to the reserves, that a very large production and a quick payout was being realized on new wells. Some of the wells in this area were drilled under these circumstances and have long since paid out. However, during recent years the steady decline in the allowable per well has tended to bring about a much longer payout period, which would indicate that many of the wells drilled in recent years have not been so profitable as the industry was accustomed to in earlier days.

For an area such as West Texas, which is carrying on an active drilling program and investing large amounts of money in new wells, it is essential to consider carefully the rate and circumstances under which additional investments should be made. The rate at which we carry on the development of West Texas' reserves will influence not only the return on our new investment but also the profitableness of our existing investment in the area. The rate of return for the industry and for any area is governed by the amount of the investment, the rate of production, the cost of production, and the price of oil. The factor which is subject to greatest control, particularly in the case of an individual area within the industry, is the amount and rate of investment. The rate of production and the price are governed by circumstances of supply and demand which affect the industry as a whole and are not necessarily related to the development in any given area. The cost of

production is also to some extent beyond our control, particularly with regard to taxes and such overhead costs as we have. Under these circumstances, unless we see definitely the prospects for larger production, or higher prices, it becomes highly desirable to restrict our investment to the minimum amount necessary.

Demand Outlook

The future outlook for demand at the present time is not such as to lead us to believe that there will be any general increase in production per well in the United States in the next few years. The industry has already experienced, and probably passed, its period of phenomenal growth and boom production. There has been a steady decline in the production per well for more than a decade now, and there is nothing at the moment to indicate a change in this tendency. Fifteen years ago there were many wells in West Texas which in their initial stages produced several thousand barrels a day. The allowables of most of our new wells nowadays start out at about 40 to 60 barrels per day, declining rapidly until they approach the general level of the wells in flush fields at the present time.

To bring the question of demand and production a little more closely home we can turn to the figures on the present demand and outlook for Texas and West Texas. Texas' participation in the United States' market has been declining during the past two years because of the entrance of new producing areas, particularly Illinois, into the market. In spite of the fact that total demand for domestic crude in the United States in the first four months of this year showed an increase of 150,000 barrels per day over the same period in 1939, the demand for Texas' crude has shown almost no gain at all. At the present time, indeed, it looks as though our demand will decline below what it has been in recent months. Texas is influenced more than any other producing state by the condition of the export market for crude and its products, and the outlook for this market is extremely dark. In the past exports of crude and products from ports in the Texas and Louisiana Gulf, which exports involve crude from all producing areas in the states of Texas, New Mexico, Louisiana, and Oklahoma, have been about 250,000 barrels per day. The war in Europe has already resulted in the loss of a large portion of this export demand, and present indications are that this loss will be extended and will continue, probably even after the termination of the war. Under these circumstances we cannot expect the demand for Texas' crude to increase by more than a small percentage each year.

The outlook for the demand for West Texas' crude is inseparably connected with that of crude from the entire state. Over a period of time the general tendency is for each area to participate in production according to the proportion which its reserves bear to other reserves and regardless of the number of wells which may have been used to develop that reserve. Because of the fact that West Texas has relatively more proved, undeveloped acreage than the rest of the state, it may expect to increase its participation slightly as development is carried on to completion. Generally speaking, however, West Texas' crude cannot be expected to displace crudes from other areas in Texas to any substantial amount under present competitive conditions. West Texas' crude is not suitable for some refinery operations, and, in addition, there are many refineries that are not equipped to handle it even if it were to be offered to them at a relatively advantageous price. These conditions impose limitations on the market for crude from West Texas which do not exist in the case of some other crudes. In a difficult period such as the present, when the outlook for demand from the United States as a whole, and Texas in particular, is highly uncertain, it is apparent that we cannot anticipate for West Texas any substantial increase in allowables which might increase the profitableness of our wells. On the contrary, the expectation for the near future is for a trend similar to that of the immediate past in which the per well allowables have declined continuously.

When we view some of the problems that face this area, and industry generally, we are sometimes inclined to seek an escape by running to some government authority to ask to be saved from our difficulties. Under the system of proration, whereby allowables are set by a commission, we sometimes seem to feel that we can get ourselves into trouble and then appeal for assistance and salvation, or lay the blame for our mistakes on someone else. Those of us who have been in the industry for a long time know that we cannot solve our problems this simply. After all, we as operators are in the best position to determine what will constitute sound development of producing properties. We cannot expect much sympathy from anyone if we first request permits for too many wells and then request unduly high allowables to permit us to make a profit out of such unnecessary wells as we have drilled. We cannot expect to proceed on the assumption that we can beat the average allowable in our area, or that we can enjoy an unfair advantage over our neighbors. Even if we should be able to gain an advantage immediately, we must recognize that it would probably be of a temporary nature and that we would ultimately have to face the facts.

Need Wider Spacing

The whole world is passing through an exceedingly critical period, and the oil industry can expect to share in the problems of the next few years. The outlook is extremely clouded, and it would require a venturesome spirit indeed to pretend to forecast with accuracy what may happen to us in the next few years. The very nature of the uncertainties which confront us call for a conservative attitude and a leaning toward the safe side. We need a larger factor of safety than ever in our operations if we are to weather the storms which may lie immediately ahead. I have confidence that we of the oil industry have learned our lessons from the experiences of the past and that we will pursue a sound course now and in the future. I believe that all of us are becoming increasingly aware of the necessity for wider spacing and careful development generally in order to insure profitable operations. We who operate in West Texas can well profit by the experience of operators in New Mexico by using a wider spacing pattern in the future than we have in the past. I am confident that sound development will bring a profitable future to this area. Circumstances during the next few years may make us feel that the payout period on our investment is unduly long in relation to what we have been accustomed to, but on the other hand, if we do develop our properties soundly we can look forward to a long period of efficient and profitable production, which will be infinitely better than a short period of boom prosperity followed by complete collapse.

Pumping Series Article No. 44

Charts Simplify Many Pumping Problems

By BEN ALTMAN, Staff Writer

SIMPLE charts will often save the operator and engineer much time in computing pump capacities, the most efficient number of strokes at which to pump a well, and required horsepower. Numerous factors enter into the selection of pumping equipment. Important is the amount of fluid to be handled, depth of the well, speed and length of stroke and size of pump plunger.

General types of surface equipment employed in the production of oil are standard rig front, individual units and multi-well installations of which there are many varieties.

Rig fronts find their adaptability in areas where only a few wells are located on isolated leases. Servicing this type of well would be impractical as well as expensive with any other type of hook-up. Units are installed if and when large potentials must be taken by pumping or when the fluid volume becomes too large for jacks to adequately handle. Multi-well hook-ups using jacks or central power operating a number of wells lower lifting costs per well and are adaptable on many leases.

Pumping equipment is not always installed prior to the completion of a well. Wells having sufficient gas pressure or hydraulic head, flow in and establish a flowing potential. However, the majority of wells must be swabbed, bailed or pumped for production. Swabbing tests usually give a figure greater than the actual capacity of the well because a greater volume may be lifted by this means than by a pump. This test is the basis on which the engineer selects the size pump required, also knowing the gravity of the crude and the depth of the well.

Simple charts enable an operator to approximate the production of a well for different combinations in length of stroke, speed of pump and the plunger diameter, and both supply and producing concerns are using them. If for example, he has a well and wishes to produce 630 barrels daily, from what combination of conditions can this be produced? From Chart 1, a typical problem is illustrated. Assuming he has a common working barrel with a 2¼-inch plunger and desires a 54-inch stroke, at what speed must the pump operate in order to produce this much fluid? From the example it is noted that 20 strokes per minute will be sufficient. For any set of pumping conditions there is a certain plunger diameter which will give the most efficient operation. An increase in the diameter over this point will result in a loss of plunger stroke and a decrease in plunger diameter will conversely result in less production since the loss due to the reduction of plunger diameter will more than offset the increase of the stroke. This chart is a convenient guide from which conditions may be solved from either end. That is, if the operator chooses to pump at a certain speed with a given length stroke and a known plunger diameter, the fluid volume may be calculated. Should the desire be to pump 630 barrels daily with a smaller plunger, 2-inch for example, by following in a straight line from the 630 mark on the bottom horizontal line up to the 2-inch size plunger and then again horizontally across until intercepted by the 20 strokes per minute line, a stroke of 74 inches would be required for that plunger diameter to produce the same volume of oil as with the 2¼-inch plunger for the same speed at the pump. A 100 percent pump efficiency, neglecting rod stretch, etc., is assumed in this chart.

From the left side of the chart, fluid volume may be computed for a 1-inch plunger, with barrels represented vertically instead of horizontally as on the right hand side. The theoretical displacement of any pump depends upon the length of plunger stroke, diameter of the plunger and number of strokes in a given time. A case may arise where the operator wants to increase the length of stroke but retarding the pumping speed, to retain the identical displacement. This chart conveniently serves this purpose.

To more accurately approach the problem other graphs are useful. If an operator completed a well and was given an allowable of 50 barrels daily, he would probably find it advantageous to produce the allowable in six hours under the wage-and-hour law. However, his pumping installation would be based on four times this allowable or 200 barrels per day. To arrive at the proper unit, the total dynamic load must be calculated. Chart 2 (which appears on page 19) will illustrate a typical solution toward finding the proper

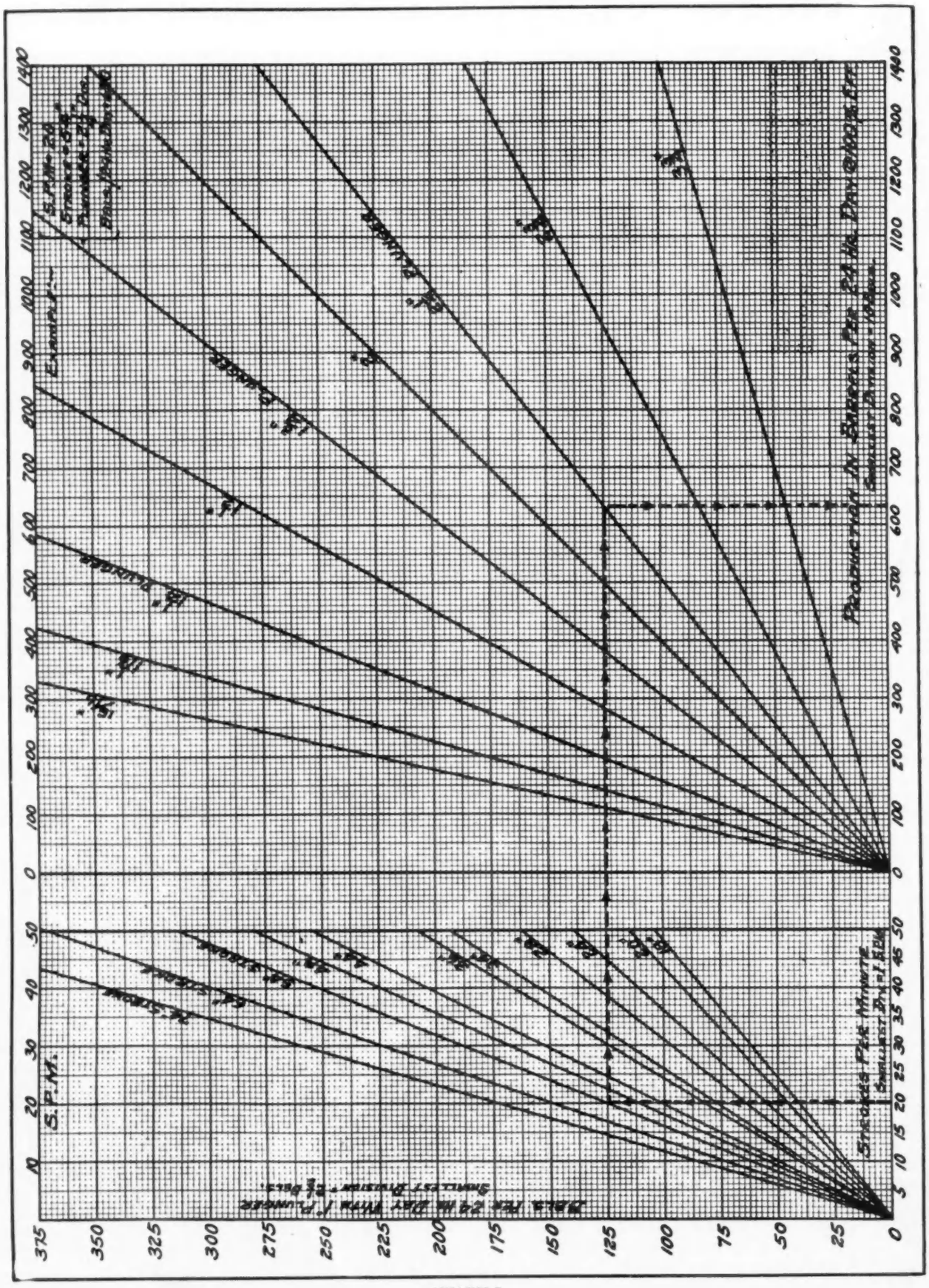


CHART 1

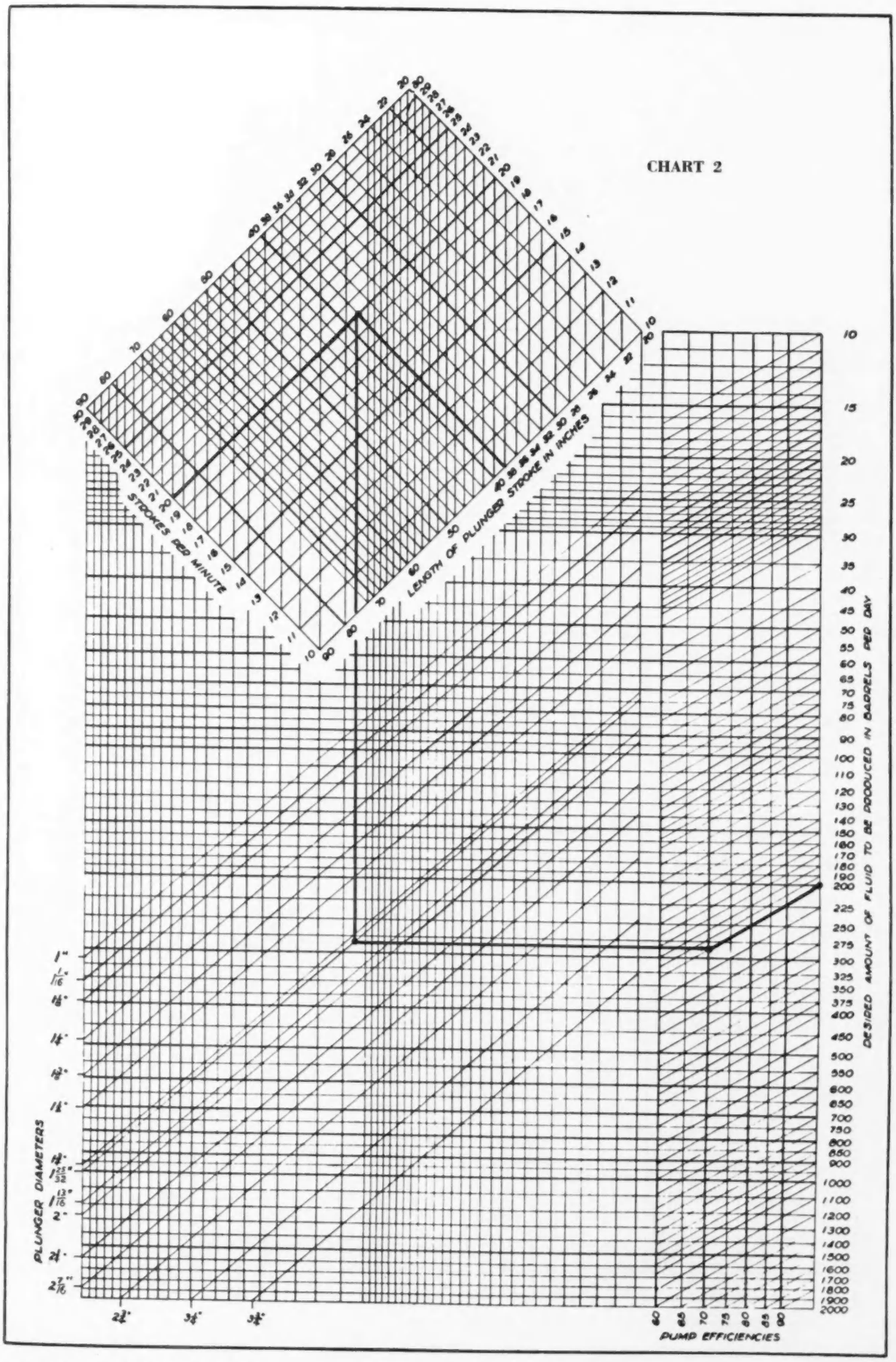


CHART 2
STROKES PER MINUTE
LENGTH OF PLUNGER STROKE IN INCHES
PLUNGER DIAMETERS
DESIRED AMOUNT OF FLUID TO BE PRODUCED IN BARRELS PER DAY
PUMP EFFICIENCIES

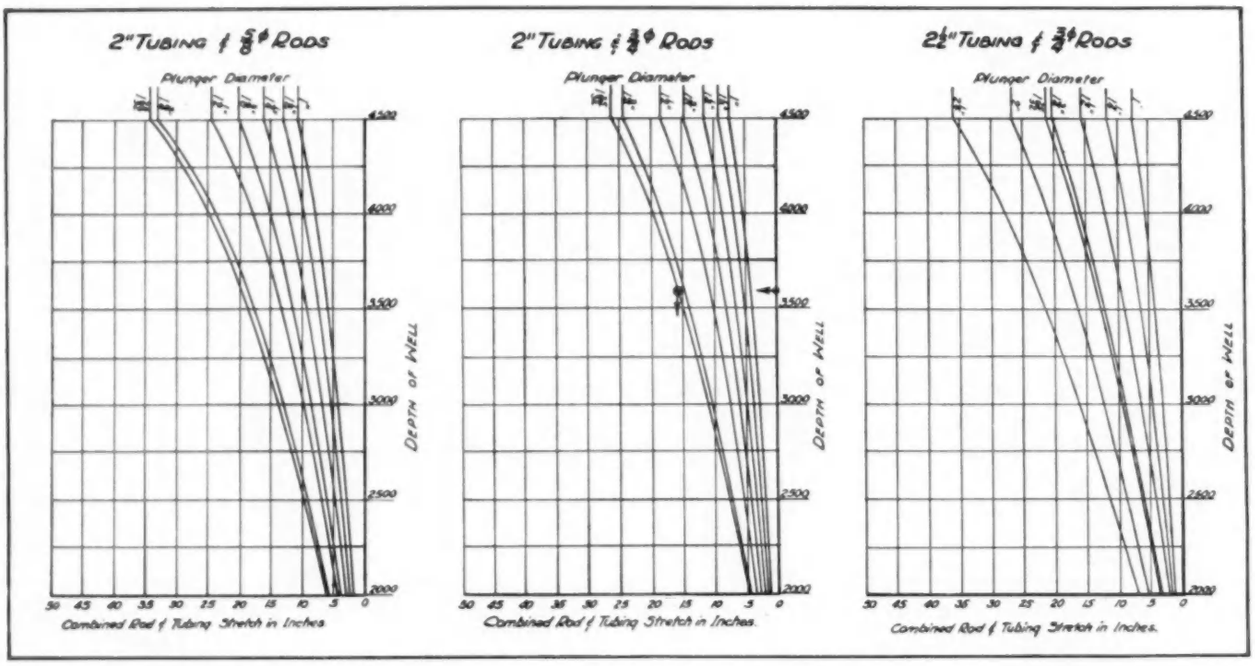

2" Tubing & 5/8 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches
2" Tubing & 3/4 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches
2 1/2" Tubing & 3/4 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches

CHART 3 **CHART 4** **CHART 5**

plunger stroke. Starting with the 200 barrels on the right of the chart and following diagonally down to the pump efficiency, assumed 70 percent in this case for the cups. Theoretically calculated displacement of a pump very seldom if ever coincides with the actual production delivered by the pump. Since a 1-25/32 common working barrel is commonly used, by following in a horizontal line from the intercepted pump efficiency to the point where it strikes the diagonal plunger diameter line, 1-25/32, in this case, and then vertically up to the Length of Plunger Strokes — Strokes Per Minute area. In this area we have many combinations from which to choose. Taking a speed of 20 S.P.M. we find it will take a plunger stroke of 38 inches.

So far we have determined 200 barrels at 70 percent pump efficiency can be produced with a standard 1-25/32-inch working bar-

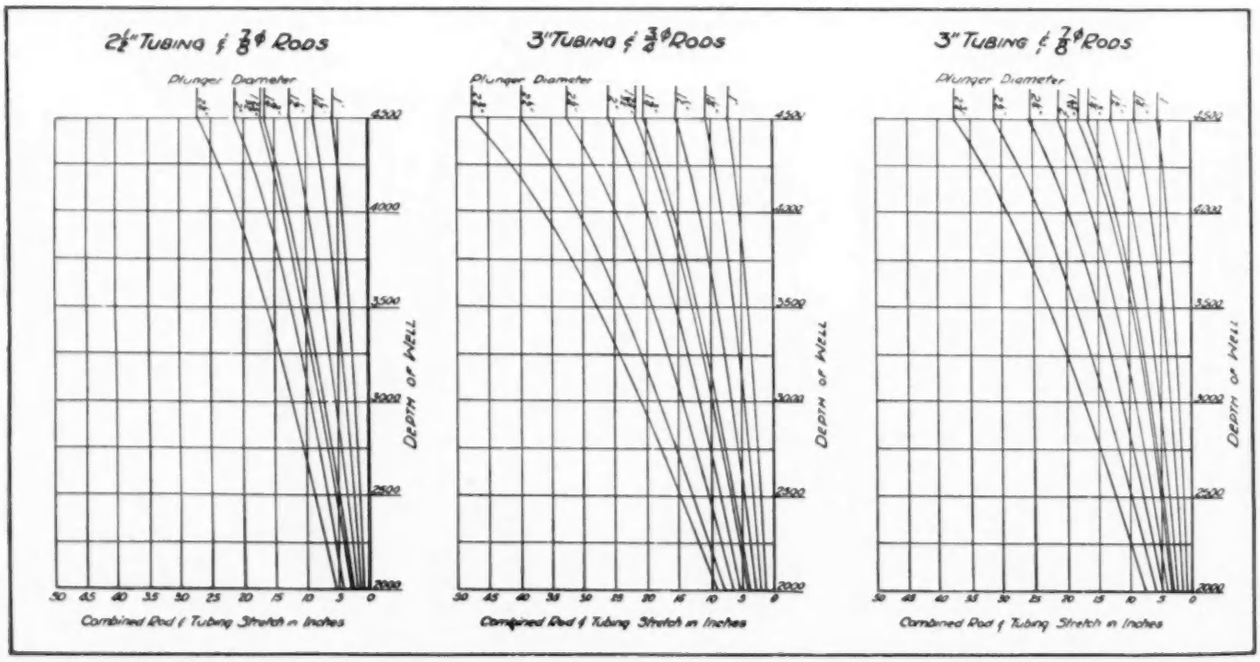

2 1/2" Tubing & 7/8 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches
3" Tubing & 1 1/2 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches
3" Tubing & 7/8 ϕ Rods
Plunger Diameter
Depth of Well
Combined Rod & Tubing Stretch in Inches

CHART 6 **CHART 7** **CHART 8**

rel in 2-inch tubing running at 20 S.P.M. with a plunger stroke of 38 inches.

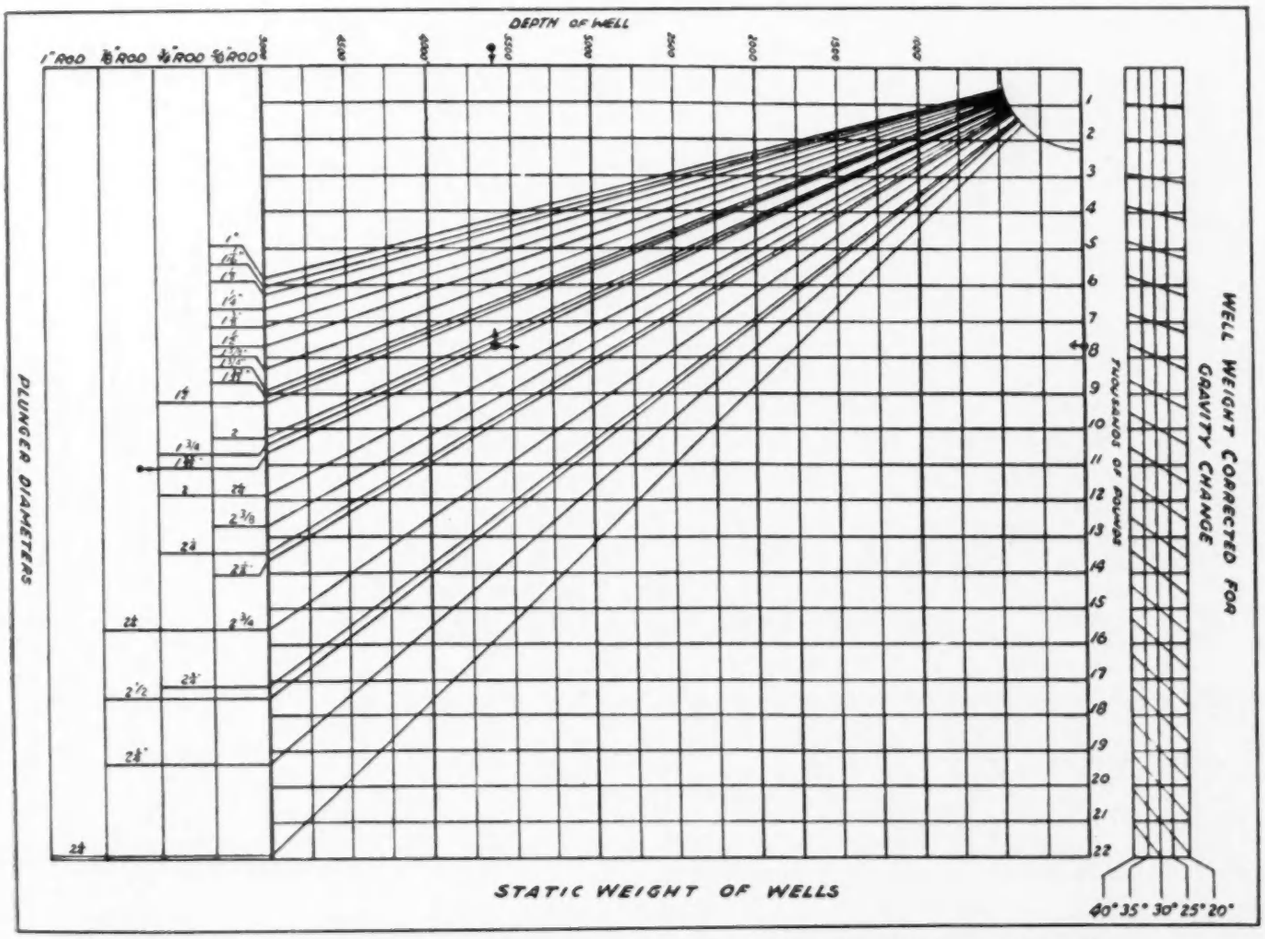
Rod and tubing stretch and overtravel must be considered as there is lost motion resulting from these factors. Without the aid of graphs, numerous equations are required to compute these factors separately. The travel of the plunger in relation to the pump barrel does not equal the polish-rod stroke due to rod stretch and movement of tubing and overtravel of plunger due to inertia of pumping parts. At the start of the upstroke, when the load of the fluid mass is being taken off of the tubing by the sucker rods, the movement of plunger in relation to the barrel does not begin until the contraction of tubing and stretch of rods has begun. At the beginning of the downstroke, the reverse is true. The contraction of rods and stretch of tubing takes place before the travel of the plunger in relation to the barrel can start. From Charts 3 to 8 inclusive the combined rod movement and tubing stretch can be obtained in a single reading. Each chart is for a different condition, including all possible combinations of rod and tubing sizes. When pumping in excess of 10 S.P.M., the inertia of the pumping parts results in plunger overtravel which tends to offset a portion of the loss of stroke due to rod stretch. Overtravel is being neglected for this particular situation, being approximately 3.8 inches, but could be computed on basis of acceleration due to weight of the rods.

Assuming depth of the well at 3600 feet and using ¾-inch rods and 2-inch tubing, from Chart 4, the combined rod and tubing stretch is easily found, being 16 inches. Adding this to the plunger stroke, the total polish rod movement is 54 inches. However, to determine the net plunger stroke, it is necessary to substract tubing and rod stretch from the polish rod stroke and overtravel.

From Chart 9 the static weight of the well, rod weight plus fluid, is determined. Following the 1-25/32 plunger line in the ¾-inch rod-line column diagonally upward until it intersects the depth of the well, 3600 feet, and moving vertically up from this point to the static column at the top, shown in thousands of pounds, we find the static weight of the well is 7700 pounds for 30 A.P.I. oil. The Gravity Change graph is noted directly above the static weight.

Finally, an impulse factor must be applied to correct for the mass since the well pumps and reverses at each end of the stroke. This factor multiplied by the static load will give the maximum dynamic weight. From Chart 10 we find that at 20 S.P.M. for a 54-inch stroke, a factor of 1.200 is obtained which multiplied by 7700, the static load, gives a total dynamic load of 9240 pounds. In other words the equip-

CHART 9



For weight of salt water (Sp. Gr. = 1.1) multiply weight of 30° A.P.I. oil by coefficient = 1.255

FOR 5/8 RODS
WORKING BBL SIZES
STROKES
DEPTH OF WELL IN THOUSANDS
INCH-POUNDS TORQUE IN THOUSANDS
0
30
60
90
120
150
180
210
240
270
300
330
360
390
420
450
1
2
3
4
5
6
7
8
2 3/4" W.B.
3" W.B.
3 1/4" W.B.
3 1/2" W.B.
3 3/4" W.B.
2 1/2" W.B.
2 1/4" W.B.
2" W.B.
1 3/4" W.B.
1 1/2" W.B.
1 1/4" W.B.
1 1/16" W.B.
1 5/16" W.B.
20"
16"
24"
28"
34"
36"
44"
54"
64"
74"

CHART 11

CHART 10

Impulse Factors

Strokes per Minute	LENGTH OF STROKE AT POLISH ROD															
	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
6	1.026	1.029	1.031	1.033	1.035	1.038	1.040	1.042	1.044	1.047	1.049	1.051	1.053	1.055	1.058	1.060
8	1.035	1.038	1.041	1.044	1.047	1.050	1.052	1.056	1.059	1.062	1.065	1.068	1.071	1.074	1.077	1.080
10	1.044	1.048	1.052	1.056	1.059	1.063	1.067	1.070	1.074	1.078	1.082	1.085	1.089	1.093	1.096	1.100
12	1.053	1.058	1.062	1.067	1.071	1.076	1.080	1.084	1.089	1.093	1.098	1.102	1.107	1.111	1.115	1.120
14	1.062	1.067	1.072	1.078	1.083	1.089	1.092	1.099	1.104	1.108	1.114	1.119	1.124	1.130	1.135	1.140
16	1.071	1.077	1.083	1.089	1.095	1.101	1.107	1.113	1.119	1.124	1.130	1.136	1.142	1.148	1.154	1.160
18	1.080	1.087	1.093	1.100	1.107	1.113	1.120	1.127	1.133	1.140	1.147	1.153	1.160	1.167	1.173	1.180
20	1.089	1.096	1.104	1.111	1.118	1.126	1.133	1.140	1.148	1.155	1.163	1.170	1.178	1.185	1.192	1.200
22	1.098	1.106	1.114	1.122	1.130	1.138	1.147	1.155	1.164	1.171	1.179	1.187	1.196	1.204	1.212	1.220
24	1.107	1.116	1.124	1.133	1.142	1.151	1.160	1.169	1.178	1.187	1.195	1.204	1.214	1.222	1.231	1.240
26	1.116	1.125	1.135	1.144	1.154	1.164	1.174	1.183	1.193	1.202	1.212	1.222	1.231	1.241	1.251	1.260
28	1.124	1.134	1.145	1.155	1.165	1.176	1.186	1.196	1.207	1.217	1.228	1.238	1.249	1.258	1.269	1.280
30	1.133	1.144	1.155	1.166	1.177	1.188	1.200	1.211	1.222	1.233	1.244	1.255	1.267	1.278	1.288	1.300
32	1.142	1.154	1.166	1.178	1.190	1.202	1.212	1.225	1.237	1.249	1.261	1.273	1.285	1.296	1.308	1.320

COMPUTED FROM A. P. I. FORMULA

$$\text{Impulse Factor} = 1 + \frac{S \times S.P.M.}{5400}$$

Where: S=Length of Stroke in inches
S.P.M.=Strokes per minute

ment must be able to handle this load plus a reserve safety factor for shock.

Assuming certain factors as constant for average pumping conditions, a unitized chart (No. 11) will enable the engineer to determine the necessary torque (inch pounds) which will be required to pump a designated well, starting from well depth and following through on this single chart.

This chart is based on 60 degree temperature F., no allowance being made for the expansion of oil at temperatures ordinarily encountered in wells. No allowance has been made for the lifting effect of the gas which may be present. Standard API rod weights are used, gravity of the oil is based on 1.00.

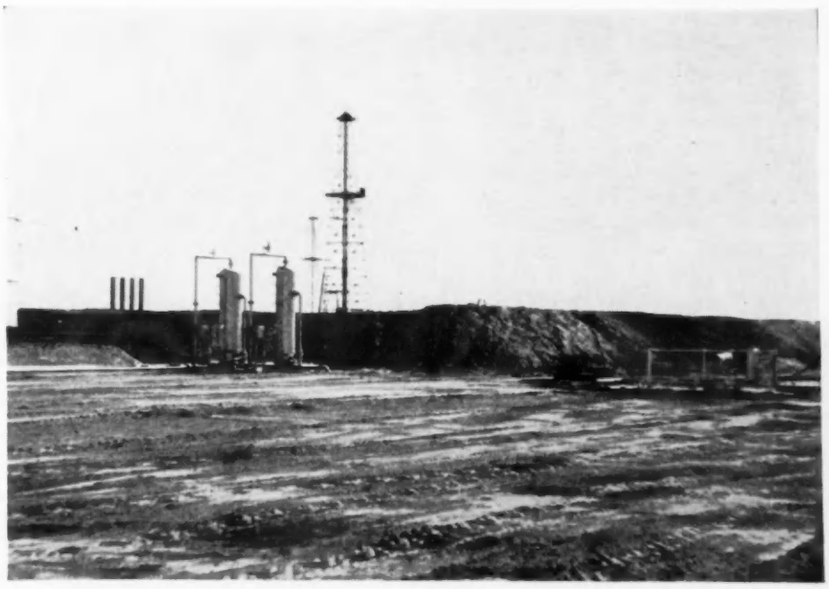
Other conditions assumed are that the well is counterbalanced to 60 percent of the static load and impulse factors are compiled to equal 20 percent of the load. Standard rod strokes and working barrel sizes are used, this chart being conformed to ⅝-inch rods only.

An example has been worked to illustrate its usefulness. Beginning at the lower left hand end of the chart, taking 2000 feet as the well depth and following vertically to intercept the stroke length, assumed as 34 inches in this problem; from this point a horizontal line is projected until the desired working barrel size is contacted, taken as 1¾ inches in this example; dropping vertically to the base line, the torque in thousands of inch-pounds is directly read off, being 28,500 inch-pounds required to pump the well.

Converting torque ratings into horsepower by a division factor of 4950, the theoretical solution would require a 5.75 or 6 horsepower unit. However, a safety factor is always taken into consideration.

One of these charts must be made up for each rod size, and to be more specific, a gravity table should be used in connection with this chart. Under this condition you will be within a very small percentage of the correct torque required to pump the well.

Deep Wells Require Big Mud Storage



Because of extreme depths to which many wells are being drilled today, a large supply of rotary mud must be available. Consequently, in deep areas such as Rio Bravo and Wasco fields of California, enormous sumps are in use.

These fields are dotted with extremely large pits surrounded by breastworks or dikes that sometimes rise 12 feet above the normal ground level. In these fields, operators are not required to move the dirt away as they must in some of the congested Los Angeles Basin fields. Steam scoop shovels are used in making the necessary excavations and dikes.

The height of the dikes prevents cattle from falling into the sumps and prevent pouring of waste volume on the ground, which would result in damage to surrounding vegetation and properties.

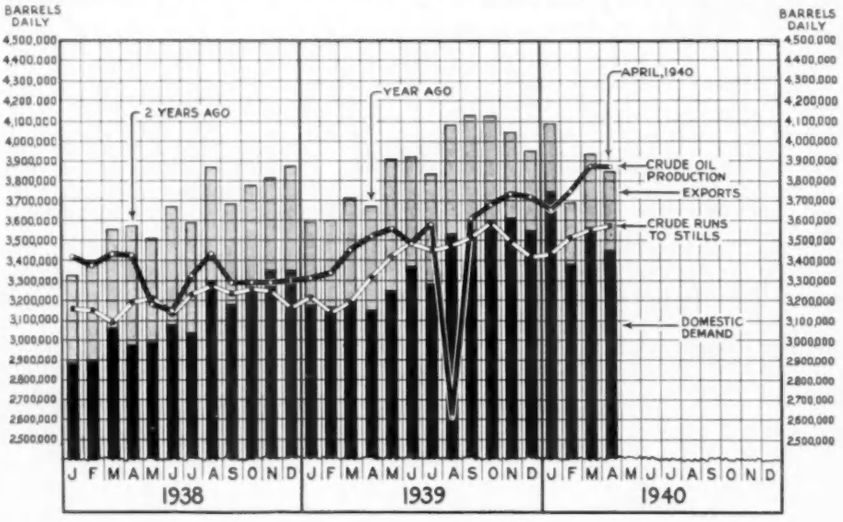
Defense Plans Make Outlook Promising at Mid-Year

By L. J. LOGAN, Associate Editor

ALTHOUGH the war situation has brought about much uncertainty in the outlook for the United States' oil industry as well as most other lines, the industry has made a comparatively good record in the first half of 1940; and continued satisfactory results are promised by the national defense program, which is expected to cause an early stepping up of general domestic industrial and business activity.

The exceptional stimulation of domestic business by the preparedness campaign has potentialities for more than offsetting losses of export business brought about by the war. And for the oil industry this is particularly true. Even without benefit of extraordinary domestic activity, such as that contemplated for the next year or so, the oil industry of the United States so far in 1940 has encountered unprecedented demand for its products, despite sharply curtailed exports. With the domestic activity increased by the huge program of airplane manufacturing, shipbuilding, munitions accumulation, and general military expansion, the oil industry possibly will be handicapped even less in the latter half of the year by the dearth of foreign business.

DEMAND FOR ALL U.S. OILS - CRUDE OIL PRODUCTION - REFINERY RUNS



Nevertheless, the industry is operating under one serious disadvantage that will be a heavy burden even if business picks up materially. It is the large surplus of gasoline, which has depressed prices of that paramount product to levels among the lowest in the history of the industry.

Markets for other products of the industry have continued comparatively good, despite some weakening in the past several months, and a general business betterment doubtless would strengthen them and stabilize prices at current or higher levels.

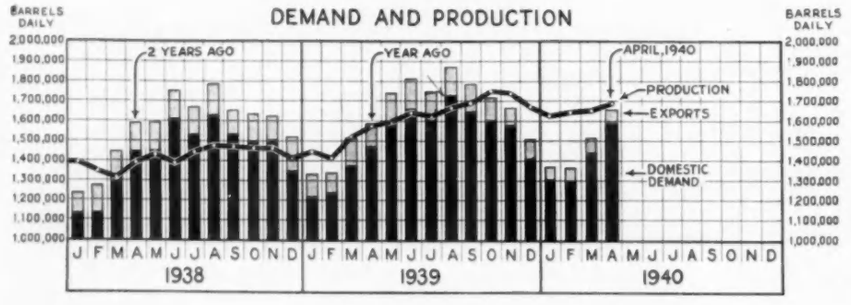
But the excess of gasoline is of such large size that any material improvement in the gasoline market likely will be slow and irregular.

The gasoline inventory appears to be at least 15,000,000 barrels larger than necessary, being still near 100,000,000 barrels, and liquidation of any substantial part of such a great surplus might be expected to require many months.

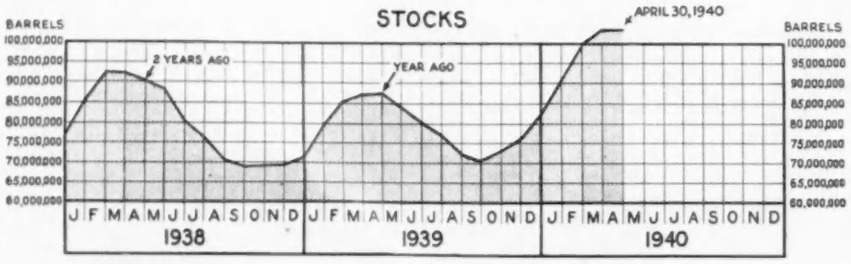
The problem probably will be made more difficult, moreover, rather than less difficult, when and if business in general responds to the national defense program. For the stepping up of industrial and

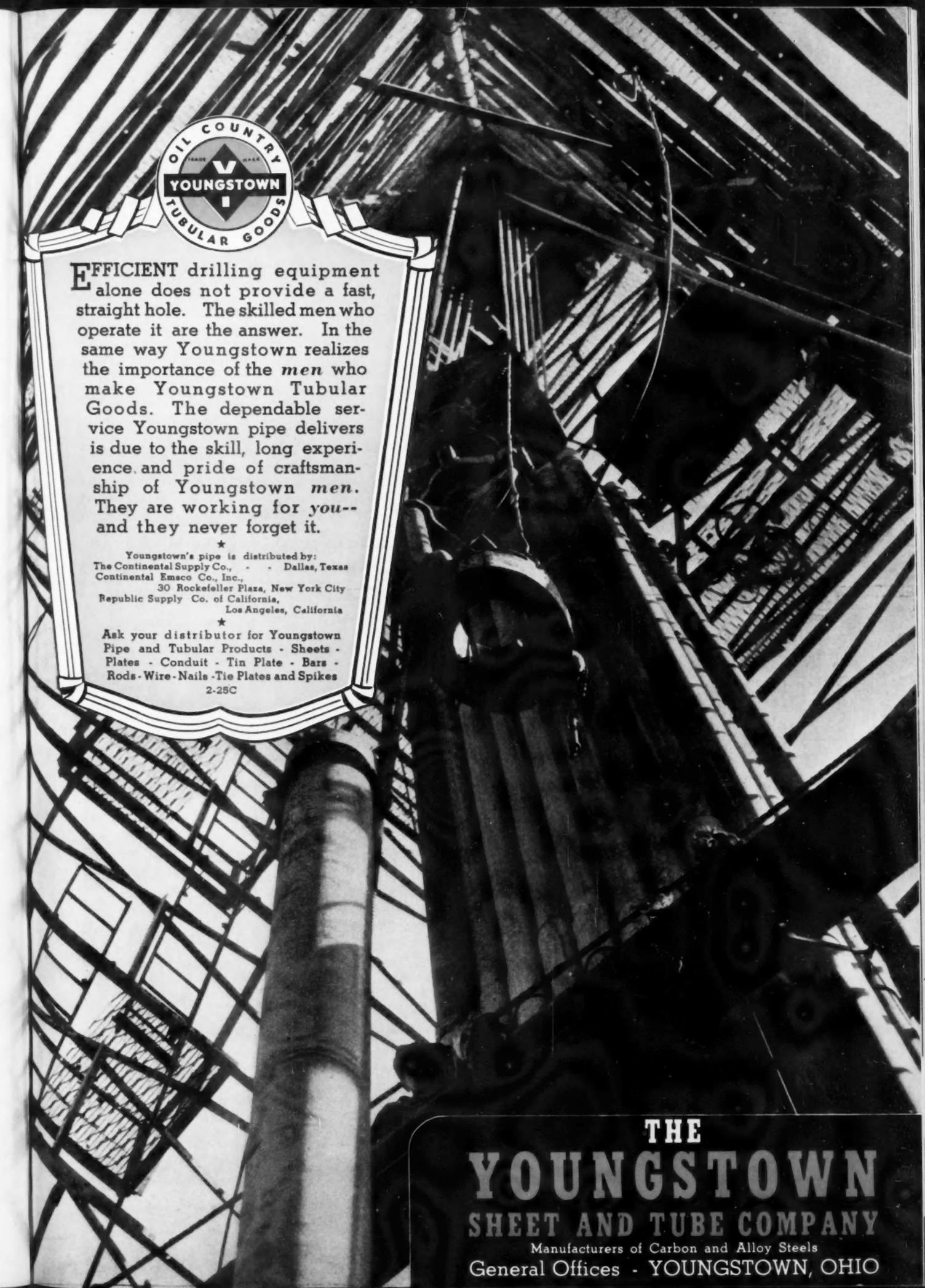
GASOLINE SITUATION

DEMAND AND PRODUCTION



STOCKS





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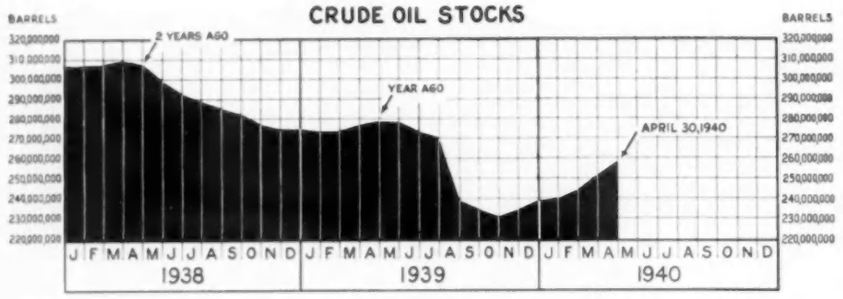
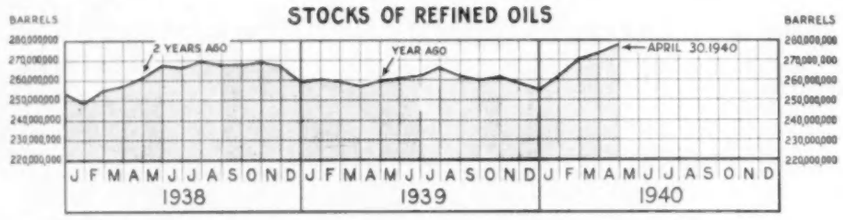



STOCKS OF REFINED OILS
BARRELS
2 YEARS AGO
YEAR AGO
APRIL 30,1940
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1938
1939
1940

commercial activity may be expected to stimulate particularly the demand for lubricants, heavy fuel oils, and some other petroleum products and thus to require comparatively large crude runs to stills. And the brisk runs, in turn, would force large current output of gasoline at the refineries, despite the absence of need for such high production.

Meanwhile, the expectation of record-breaking consumption of heating oil next winter already constitutes an inflationary influence on refinery runs, and that influence will remain operative through the summer, fall, and winter.

In coming months, therefore, the need for definite efforts toward controlling gasoline stocks probably will be accentuated, rather than alleviated, despite the fact that large seasonal consumption will afford opportunity for liquidating surplus supplies.

The industry, consequently, will not be in position to relax the efforts it has been making heretofore toward a more economic inventory of gasoline by holding down the yields of that product, while taking proportionally larger yields of light fuel oils.

For the first three months of this year, oil companies reported exceptionally good earnings, having almost equaled the record for the corresponding period of 1937, one

Changes From Year Ago in Stocks of Crude and Refined Oils in the United States

(Figures indicate barrels)

LATEST WEEKLY DATA

(Sources: Crude Stocks, Bureau of Mines; all other figures American Petroleum Institute.)

STOCKS OF:	June 24, 1939	June 22, 1940	Percent Change
Gasoline	81,331,000	97,276,000	+19.6
Gas Oil & Distillate	30,794,000	32,751,000	+ 6.4
Residual Fuel Oil	112,245,000	104,683,000	- 6.7
Crude Oil	[1]274,852,000	[2]259,800,000	- 5.5

LATEST MONTHLY DATA

(Source: Bureau of Mines.)

ITEM	Stocks at End of April		
	1939	1940	Percent Change
SUMMARY—			
Crude Petroleum:			
Refinable in U.S.	278,565,000	258,066,000	- 7.4
Heavy in California	15,198,000	13,516,000	-11.1
Natural Gasoline	5,484,000	6,112,000	+11.5
Refined Products	268,565,000	277,739,000	+ 3.4
Total, all oils	567,812,000	555,433,000	- 2.2
Day's supply: April Basis	155,000	145,000	- 6.7
PRODUCTS—			
Gasoline:			
Finished	81,623,000	96,615,000	+18.4
Unfinished	5,908,000	6,984,000	+18.2
Total	87,531,000	103,599,000	+18.3
Kerosene	5,663,000	4,351,000	-23.2
[3]Gas Oil & Distillate Fuels	21,058,000	20,310,000	- 3.6
[3]Residual Fuel Oils	90,411,000	83,825,000	- 7.3
Lubricants	7,886,000	8,065,000	+ 2.5
Wax (pounds)	119,301,000	96,910,000	-18.8
Coke (short tons)	734,000	663,000	- 9.7
Asphalt (short tons)	688,000	768,000	+11.6
Road Oil	1,048,000	1,145,000	+ 9.3
Miscellaneous	283,000	407,000	+43.8
Other Unfinished Oils	37,732,000	38,299,000	+ 1.5

[1] Stocks on hand June 17, 1939.
[2] Stocks on hand June 15, 1940.
[3] At refineries only.

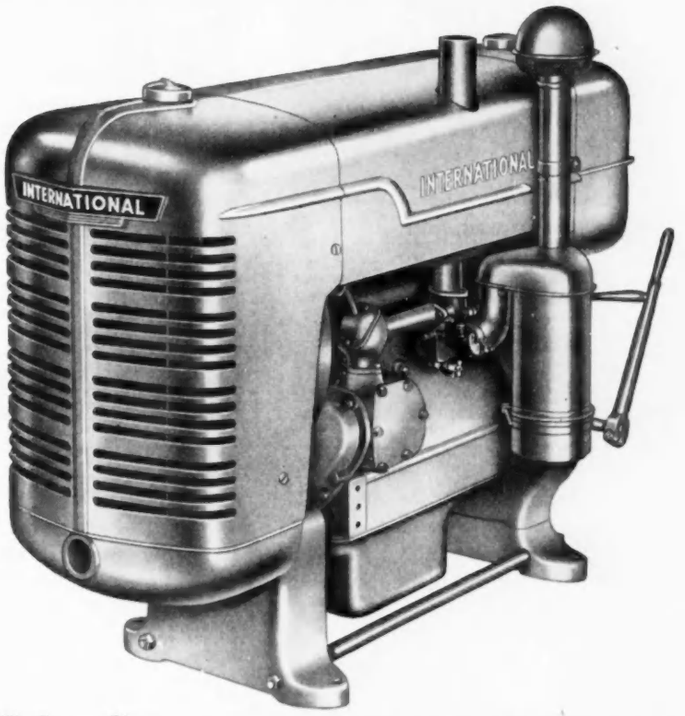
Oil Demand Up in 1940 Despite Smaller Exports

Figures indicate barrels, and are from Bureau of Mines

	APRIL			FIRST FOUR MONTHS		
	1939	1940	Percent Change	1939	1940	Percent Change
SUMMARY—						
Total Demand	110,097,000	115,303,000	+ 4.7	440,237,000	471,124,000	+ 7.0
Daily average	3,670,000	3,843,000	+ 4.7	3,669,000	3,894,000	+ 6.1
Exports:						
Crude petroleum	6,222,000	4,262,000	- 31.5	20,475,000	15,837,000	- 22.6
Refined products	9,243,000	7,515,000‡	- 18.7	35,921,000	27,589,000	- 23.2
Total exports	15,465,000	11,777,000	- 23.9	56,396,000	43,426,000	- 22.9
Domestic Demand:						
Total domestic demand	94,632,000	103,526,000	+ 9.4	383,841,000	427,698,000	+ 11.4
Daily average	3,154,000	3,451,000	+ 9.4	3,199,000	3,535,000	+ 10.5
TOTAL DEMAND FOR PRODUCTS						
Motor Fuel:						
Domestic	43,977,000	47,683,000	+ 8.4	158,859,000	170,217,000	+ 7.2
Exports	3,663,000	2,075,000†	- 43.4	14,546,000	8,517,000	- 41.4
Total	47,640,000	49,758,000	+ 4.4	173,405,000	178,734,000	+ 3.1
Aviation Gasoline (included above):						
Domestic	*	209,000	.....	*	1,546,000	.....
Exports	323,000	302,000	- 6.5	1,450,000	831,000	- 42.7
Total	.....	511,000	.....	.....	2,377,000	.....
Kerosene:						
Domestic	5,042,000	5,621,000	+ 11.5	22,124,000	25,799,000	+ 16.6
Exports	713,000	399,000	- 44.1	2,601,000	1,573,000	- 39.6
Total	5,755,000	6,020,000	+ 4.6	24,725,000	27,372,000	+ 10.7
Gas Oils & Distillate Fuels:						
Domestic	10,856,000	12,210,000	+ 12.5	56,509,000	69,421,000	+ 22.8
Exports	2,345,000	1,966,000	- 16.2	9,075,000	7,067,000	- 22.1
Total	13,201,000	14,176,000	+ 7.4	65,584,000	76,488,000	+ 16.6
Residual Fuel Oils:						
Domestic	24,472,000	26,526,000	+ 8.4	106,940,000	116,371,000	+ 8.8
Export	1,488,000	1,532,000	+ 3.0	5,893,000	4,372,000	- 25.8
Total	25,960,000	28,058,000	+ 8.1	112,833,000	120,743,000	+ 7.0
Lubricants:						
Domestic	1,770,000	2,138,000	+ 20.8	7,019,000	7,597,000	+ 8.2
Exports	816,000	1,161,000	+ 42.3	3,176,000	4,511,000	+ 42.1
Total	2,586,000	3,299,000	+ 27.6	10,195,000	12,108,000	+ 18.8
Wax (pounds):						
Domestic	14,597,000	29,537,000	+ 102.3	82,900,000	101,095,000	+ 22.0
Exports	20,090,000	19,156,000	- 4.6	83,979,000	94,207,000	+ 12.2
Total	34,687,000	48,693,000	+ 40.4	166,879,000	195,302,000	+ 17.0
Coke (short tons):						
Domestic	78,900	86,700	+ 9.9	435,200	470,100	+ 8.0
Exports	23,100	13,500	- 41.6	51,500	49,300	- 4.3
Total	102,000	100,200	- 1.8	486,700	519,400	+ 6.7
Asphalt (short tons):						
Domestic	334,600	302,000	- 9.8	909,700	849,000	- 6.7
Exports	3,800	29,400	+ 674.0	17,300	91,700	+ 430.0
Total	338,400	331,400	- 2.1	927,000	940,700	+ 1.5
Road Oil:						
Domestic	267,000	190,000	- 28.8	848,000	501,000	- 40.9
Miscellaneous:						
Domestic	181,000	156,000	- 13.8	694,000	554,000	- 20.2
Exports	9,000	85,000	+ 844.4	31,000	462,000	+1388.0
Total	190,000	241,000	+ 26.8	725,000	1,016,000	+ 40.2

* Figures not available. †Includes benzol. ‡ Exclusive of 10,000 barrels exported from non-contiguous territories, but inclusive of 955,000 barrels shipped from United States to territories.

Here's Another *New* INTERNATIONAL Power Unit for Oil-Field Work



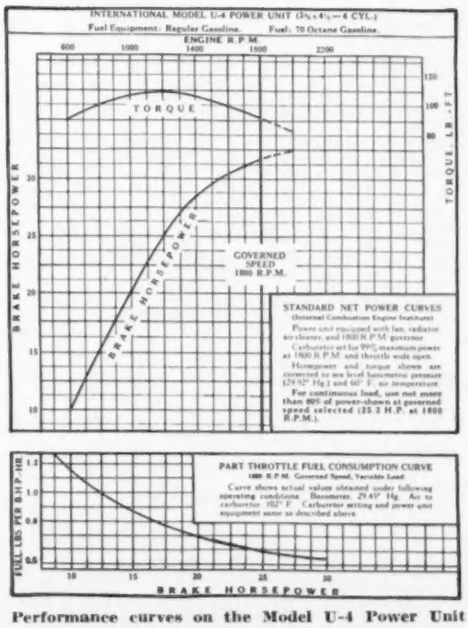
This New International U-4 is a 4-cylinder power unit developing 31½ h.p. at 1,800 r.p.m.—power for a variety of jobs in the oil industry. It can also be equipped to operate on gas, distillate and kerosene.

The U-4 provides new efficiency and new economy in its power range. Among its many features that prove their value on the job are: Valve-in-head design, replaceable cylinders, efficient combustion control, pressure lubrication, Tocco-hardened crankshaft, full-floating piston pins, by-pass type thermostatically controlled cooling, precision-type main bearings, and water pump with full-floating shaft.

Like all International Power Units, the U-4 is easily adapted to a wide variety of uses. Basic parts can be attached or removed without interfering with other parts, making possible many equipment combinations to meet individual needs.

Ask the nearby International dealer or Company branch for full details on the U-4 and other models in the line. Sizes range up to 110 max. h.p. There also are 4 New International Diesel Power Units, up to 100 max. h.p.

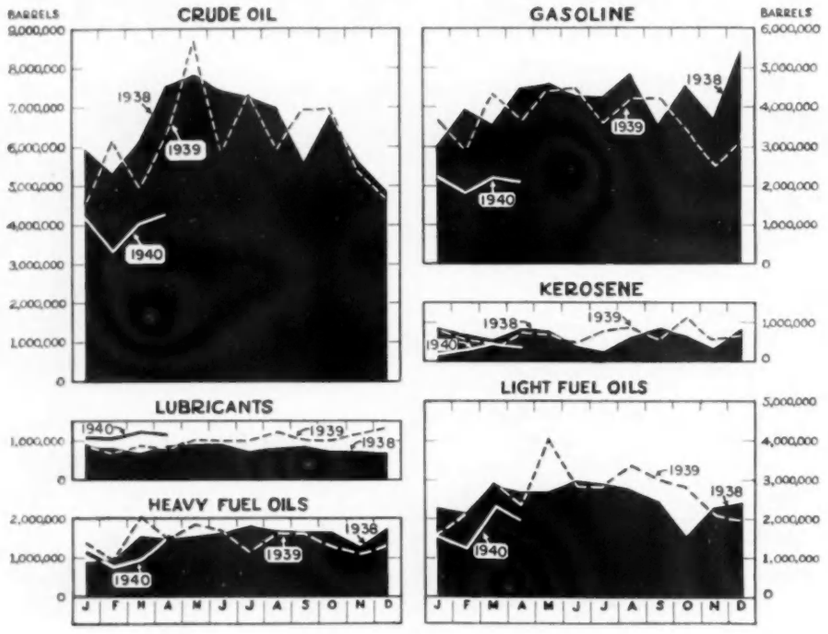
INTERNATIONAL HARVESTER COMPANY
(Incorporated)
180 NORTH MICHIGAN AVENUE CHICAGO, ILLINOIS



Performance curves on the Model U-4 Power Unit operating on gasoline. Fuel consumption is with the engine operating under various loads at 1,800 r.p.m.

INTERNATIONAL Industrial Power

U. S. Exports of Crude Petroleum and Refined Products



of the industry's most profitable years. For record volumes of business were transacted, with total demand greatest ever encountered, despite sharply curtailed exports; and prices of crude and refined oils were good, although they weakened as the quarter progressed.

Although results have been fairly satisfactory in the second quarter, the period probably will be considerably less profitable than the first quarter. For the less favorable market conditions which developed in the latter part of the first quarter have extended into the second quarter, and average prices of both crude and refined oils are lower in the current period, now practically at its end. The industry's markets have been particularly unsettled in recent weeks, and prices of fuel oils, kerosene, and lubricants, as well as gasoline, have declined. Prices of Pennsylvania grade crude were reduced 25 cents a barrel May 22 and 25 cents more on June 18, in consequence of declines in lubricant prices. California crudes were cut an average of about 7 cents a barrel February 1, and a further reduction now is threatened, because of the recent break in retail gasoline prices throughout the Pacific Coast region.

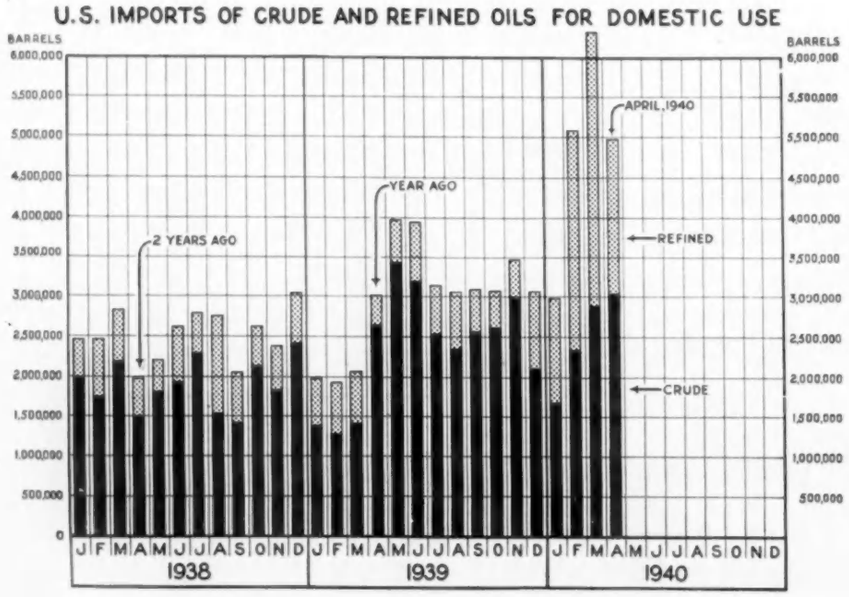
So far in 1940, demand for petroleum has exceeded the more conservative expectations. In the first four months of the year, total demand was 6.1 percent greater than in the corresponding months of 1939, on a daily average basis, as an increase of 10.5 percent in domestic demand far more than compensated for declines of somewhat over 20 percent in exports of both crude oil and refined products.

For April, similar trends prevailed, although gains over 1939 were somewhat smaller. During the month, total demand was 4.7 percent greater than in April, 1939, as a 9.4 percent increase in domestic consumption outweighed export decreases of 31.5 percent for crude oil and 18.7 percent for refined products.

Export Situation

Lubricating oil has been the only major oil export item that has moved out in increased quantity since the European war broke out. In the first 8 months of the conflict, total exports of United States crude and refined oils amounted to 103,833,000 barrels, compared with 116,834,000 barrels in the corresponding months a year earlier, a decrease of 13,000,000 barrels or 11 percent. Shipments of crude were down 8 percent and those of refined products 13 percent.

U.S. IMPORTS OF CRUDE AND REFINED OILS FOR DOMESTIC USE



Oil Imports for Domestic Use Up Sharply

Figures indicate barrels and are from Bureau of Mines.

MONTH	Crude Oil	Refined Products	Total
January:			
Jan., 1939	1,373,000	609,000	1,982,000
Jan., 1940	1,664,000	1,321,000	2,985,000
Percent Change	+21.2	+117.1	+52.0
February:			
Feb., 1939	1,266,000	654,000	1,920,000
Feb., 1940	2,343,000	2,731,000	5,074,000
Percent Change	+85.0	+320.0	+164.0
March:			
Mar., 1939	1,404,000	659,000	2,063,000
Mar., 1940	2,895,000	3,410,000	6,305,000
Percent Change	+106.2	+417.4	+205.6
April:			
April, 1939	2,648,000	366,000	3,014,000
April, 1940	3,041,000	1,948,000*	4,989,000
Percent Change	+14.8	+432.0	+65.5
1st 4 Months:			
1939	6,691,000	2,161,000	8,852,000
1940	9,943,000	9,410,000	19,353,000
Percent Change	+48.6	+335.5	+118.7

* Exclusive of 43,000 barrels into territories.

Pressure Constants Used to Fix Potentials of Flowing Wells

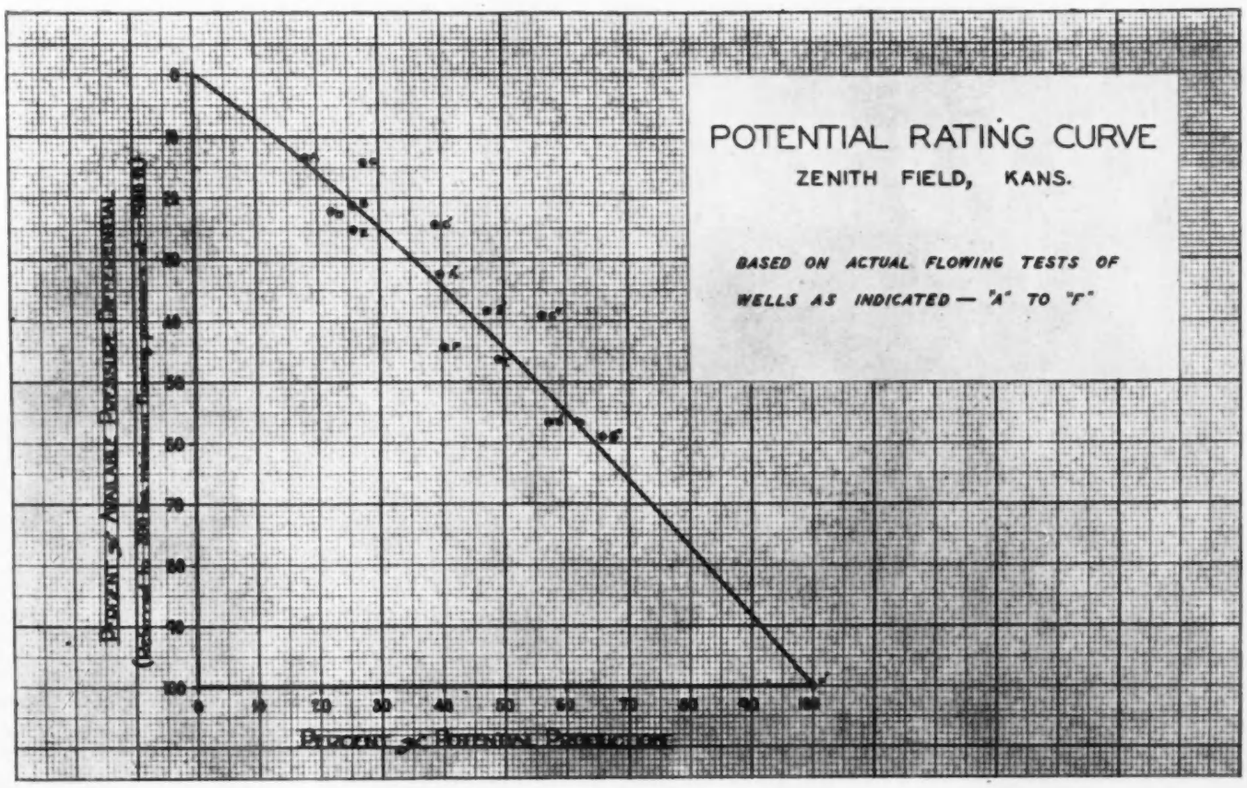
By FRANK B. TAYLOR, Staff Writer

TO MEET varying conditions of production in new completions, the Kansas Corporation Commission has approved a variety of methods by which potential tests might be officially made. These methods include pumping tests on wells that do not flow, with the fluid drawdown at different rates of production established through the use of fluid-level recorders; tests with production volumetrically measured; and tests in which productivity factors are derived from recordings of bottom-hole pressure at constant rates of production. The latter method, which has been approved and in practice for the past 18 months is an advanced efficacy applicable to flowing wells.

Use of the bottom-hole pressure method of obtaining well potentials is made permissible by the director of the conservation division upon application. Operators of Zenith pool, Stafford County, have evolved a potential rating curve for the field, this curve being the result of physical analysis of flow rates and coincident pressure declines of wells while in the state of flow. From this direct information, operators established the rating curve which has been approved by the state. For other areas, another method is being used, basically dependent upon bottom-hole pressure drop with differing rates of production, but evolved on zero pressure at the top of the pay formation.

While Kansas generally is considered as having but few completions which normally might be classed as flowing wells, there have been exceptional pools brought in that contradict the general picture. Of these the most outstanding are Hittle, Cowley County; Bornholdt, Rice and McPherson counties; Otis, Rush County, and Rahn, Cowley County. In each of these, bottom-hole pressure tests are made at the choice of operators to determine well potentials.

Certain advantages accrue from the use of a restricted flow-pressure-drop relationship for determining actual productivity of wells that do not result from other methods. A full open flow of a producer results in considerable immediate production, and this calls for lease storage or disposal far in excess of normal requirements. By unrestricted open flow of a producer, there is danger of producing a water cone, gas cone, or in some manner bringing about a physical injury to the producing area. Both of these drawbacks are nullified by applying the index. In addition,



NATIONAL has Everything in PUMPING EQUIPMENT

..... To Completely Equip

Any Type of Lease in Any Territory Pla

BEAM &
ASSEMB
•
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DUCTION
•
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WORKING BARRELS
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BALLS AND SEATS
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BEAM HANGERS
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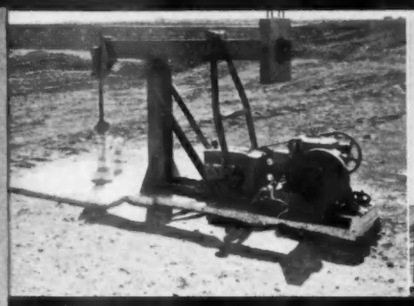
POLISHED RODS



TU 20G-JD2T UNIT PUMPER

TU 234-JD23TB UNIT PUMPER

TU 803-H110T UNIT PUMPER

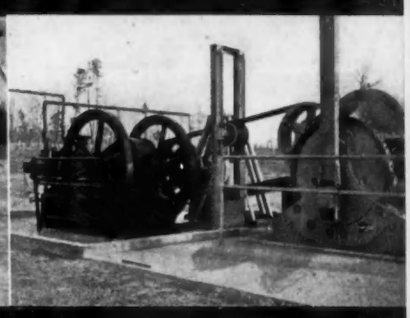
THREE WELL HOOK UP

FOUR WELL HOOK UP

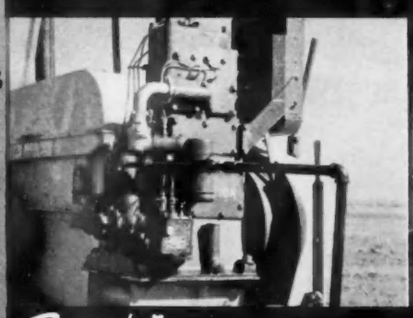
GEARED POWERS

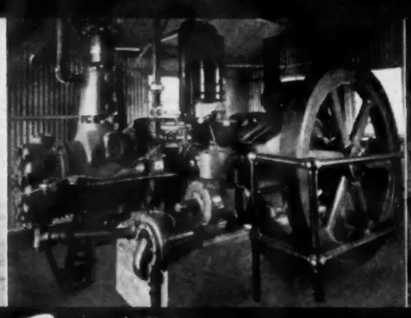
SUCKER RODS

PUMPING JACKS



BELT TIGHTENERS





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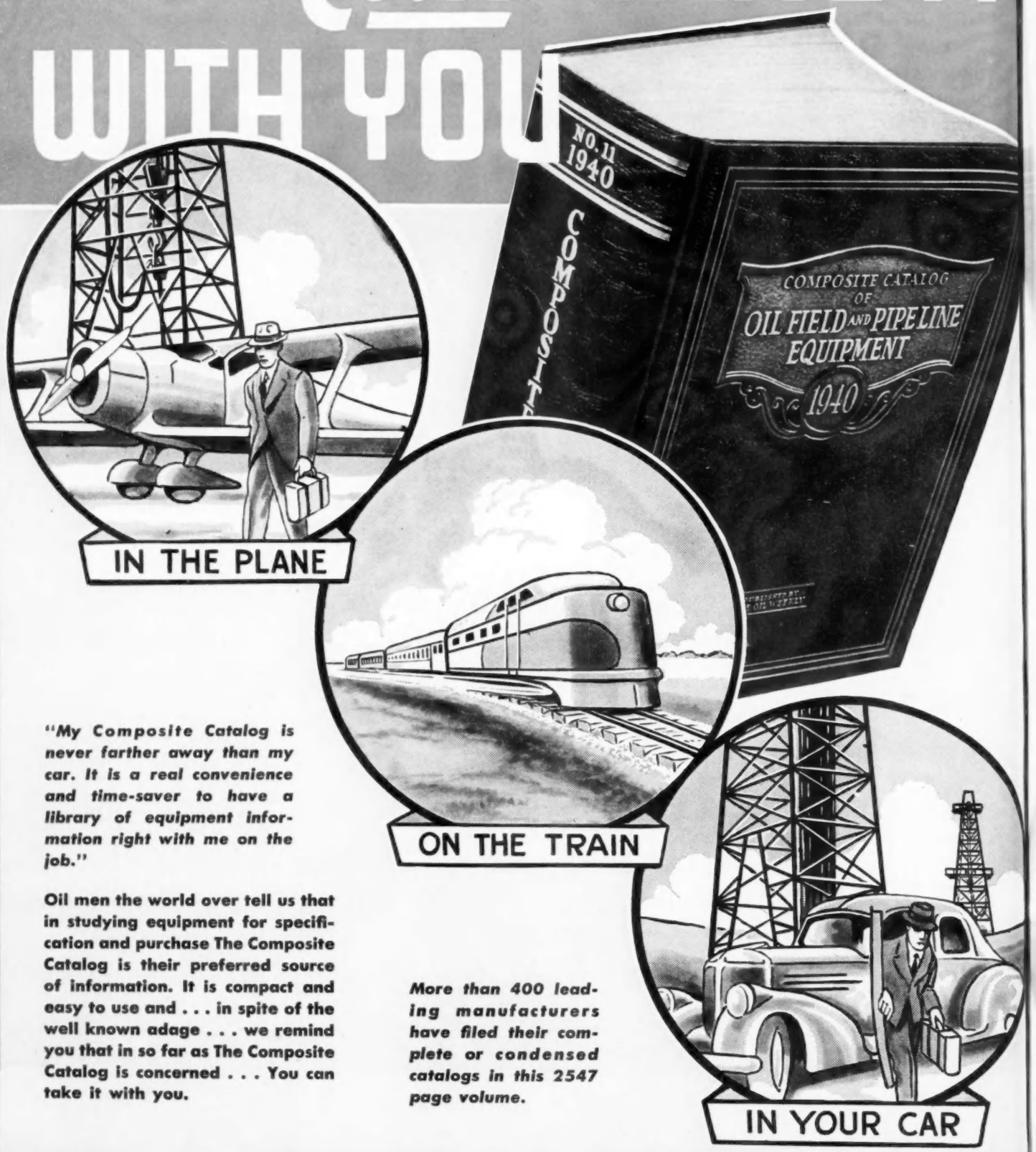

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the pressure decline test can be exactly duplicated a month or a year later to accurately establish any change or rate of change in a well or field's productive ability. Correlation through the point at which a well no longer flows to drawdown potentials is possible so that the change from one method to the other is bridged by fundamental data rather than by supposition. Last, but still important, is the fact that pressure tests do not require expensive and extensive equipment solely for testing purposes.

Digest of Factors

Certain fundamentals of production make possible the use of flow gradients, expressed in pounds pressure, to estimate the productive ability of a well. This ability is dependent upon pressure being available within the formation to force fluid into the well bore. The relative quality which might then be produced is dependent upon the permeability of the formation, saturation of the formation, weight and resistance of the fluid column during a state of flow, availability of energy in terms of foot pounds per minute, and the thickness of the formation. Seeking an ideal expression of these data to judge the capacity of a particular well to produce, such could only be attained if it were possible to expose the sand at the well bore under conditions existing at the surface, or under atmospheric pressure and without the continually retarding effect of decreasing pressures with increased flow.

Obviously, these factors cannot be practically determined, so instead they are calculated under existing conditions. Under flowing conditions, the column of rising fluid imposes successively less pressure from the formation to the surface, and overcomes frictional resistance which is the function of the size of pipe, viscosity of fluid and rate of flow. The capacity of a well to produce can therefore be based on the static bottom-hole pressure, change in flowing bottom-hole pressure coincident with varying rates of production, frictional resistance of the producing equipment, and weight of the flowing oil and gas column.

From this analysis it is apparent that the rates of flow may be plotted against bottom-hole pressure to indicate maximum production at any predetermined pressure which may be required to lift the fluid from the formation to the surface. By following the same reasoning it is possible to plot an average curve for an entire field. In the case of Zenith the percent of available pressure differential was referred to 300 pounds as the minimum bottom - hole flowing pressure at minus 1900 feet, this being based upon actual supporting tests.

Equipment used to take well potentials.

Application of Two Methods

With the exception of Zenith, the following procedure allows computation of potentials through the use of the subsurface pressure gauge.

The well has first been shut in for at least 24 hours. The bomb is then run and one or more 200-foot gradients are taken to accurately obtain the static weight of the fluid. (Weight "A" minus weight "B" divided by 200 equals per-foot weight of fluid column.) The bomb is then run, on a wire line, to its permanent location for the duration of the test.

The well is then opened and flowed at 3 rates for a duration of 3 hours. During these flows, which should be in the approximate ratio of 5, 10 and 15, with the maximum rate less than 50 percent of the expected capacity of the well through casing; the pressure should not vary more than 5 pounds per hour. This requires stabilization of the flow. The bomb, which is run through 3-inch tubing to a position preferably below the formation producing through perforations, records pressure in pounds per square inch.

From the gauge of the oil produced and the recorded bottom-hole pressure data, the productivity index is calculated from the three rates. The lowest rate and the average of the second and third rates are plotted on coordinate paper with average bottom-hole flowing pressure as ordinate and barrels per day abscissa. A straight line extended through these points intersects the abscissa, or the daily rate, at zero pounds bottom-hole pressure for the estimated potential, provided that the difference in the productivity index between the lowest and the highest rate and the lowest and the intermediate rate divided by the larger of the two indices shall not exceed 10 percent.

The daily rate of production is divided by pounds drawdown to equal the productivity index, and the average index of the three rates multiplied by the pressure at the top of the formation is equal to the potential.

The Zenith order differs somewhat from the above. Operators in the field run the bomb in the same manner to obtain static and flowing pressures, but correct these to minus 1900 feet. The well is then regulated to about 40 percent of an estimated open-flow capacity through 7-inch casing. After a 3-hour regulation period so that a relatively stable flow is obtained, the control is sealed off and the well allowed to produce for 5 more hours.

The last 4 hours' production is then interpreted in terms of daily production and the potential calculated. The following is a typical example:

Static

$\frac{1104-841}{1104-300}=\frac{293}{804}=$ 36.44 percent of available pressure.

in which

Static Bottom Hole Pressure at minus 1900 feet=1104 Pounds.

Averaging Flowing BHP, last 4 Hrs at 1900 feet=841 pounds.

Minimum flowing pressure (Predetermined by tests)=300 pounds.

Restricted rate through Tubing=1000 barrels daily

Then

Total Pressure Differential=1,104-300=804 and

Pressure Differential used=1,104-841=293 and

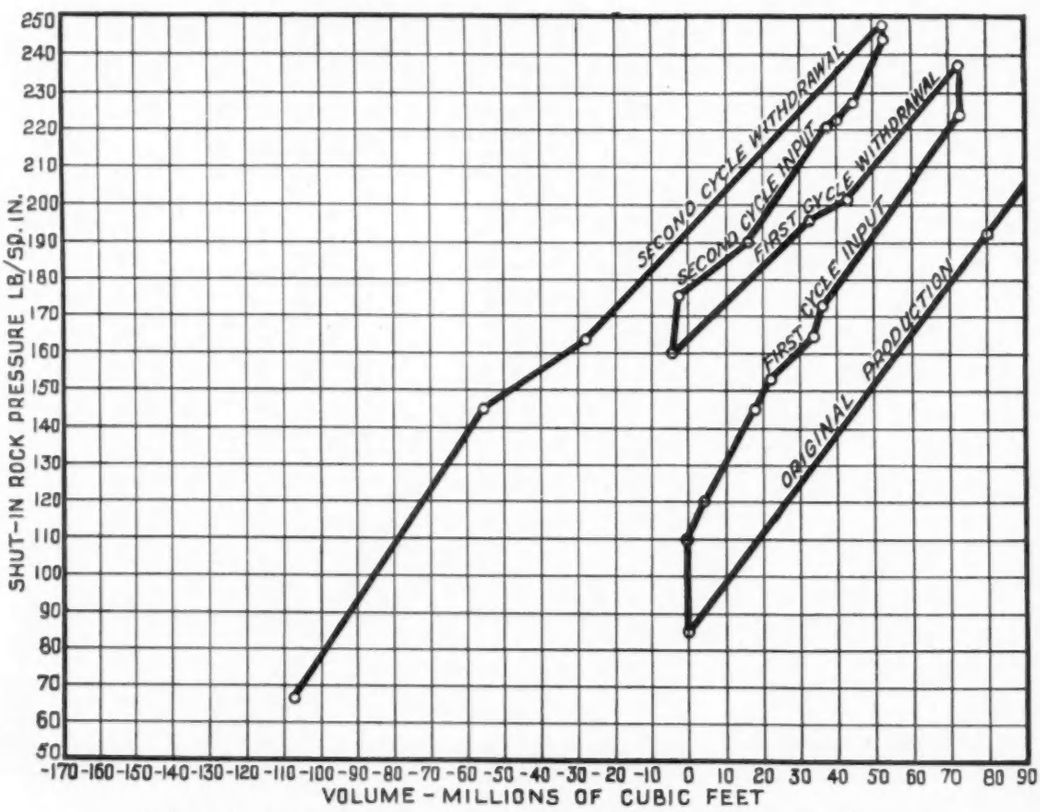
Percent Pressure Differential Used=293/804=36.44 percent.

Referring to the Zenith field curve, 36.44 percent indicated that the well produced 41.9 percent of its capacity through casing. Therefore the casing potential is equal to $\frac{1,000}{.419}$, or 2387 barrels.

Experiences With the Underground Storage of Gas*

By C. U. DANIELS
Oklahoma Natural Gas Company, Tulsa, Oklahoma

OKLAHOMA NATURAL GAS COMPANY decided to experiment with the underground storage of gas in depleted sands when the depletion of important reserves in the vicinity of the Tulsa market forced the transportation of gas over considerable distances in order that the demand be supplied at that point. It was apparent that such storage would improve the transmission system load factor, provide a margin of safety for peak demands, reduce the waste of gas, and allow the company to obtain the advantage of dump prices on distress gas during periods of low demand.



Bixby gas storage reservoir rock pressure variation with input and withdrawals

A study was made of several small depleted fields in order that one might be obtained which embodied the following advantages: proximity with respect to the Tulsa market, shallow depth, high porosity of sand, small acreage, absence of rapid edgewater encroachment, sufficient sand thickness, and isolation from other producing areas.

A small structure, involving about 300 acres, located about 25 miles from Tulsa, was finally chosen as a reservoir in order that an experiment of gas storage could be conducted. Four wells had been drilled in the structure since 1933, which had an original total open flow of 24,339,000 cubic feet. Two of these wells were dead by July of 1936, and production was discontinued on the remaining two near the end of the same year. The initial pressure was 560 pounds and the abandonment pressure was 83 pounds after a total of 510,000,000 cubic feet had been produced from the sand. Production was found at approximately 1750 feet in this locality. The sand is approximately 45 feet thick and the porosity is estimated to be 20 percent.

In 1937, the leases involved were acquired, three of the wells were plugged, and a small compressor plant was erected for the purpose of injecting gas into the sand through the one remaining well. Storage of gas was begun in 1937, and, since that time, two cycles of injection and withdrawal have been completed. Injection for the third cycle will be made during the summer of 1940.

The first cycle of operation was begun in April, 1937, and 77,189,000 cubic feet of gas at 2 pounds pressure base were introduced to the sand by the time injection was stopped in September, 1937. During the period from December of the same year to April, 1938, withdrawals totaling 79,623,000 cubic feet were made, or 2,434,000 cubic

*One of a group of six papers on experiences with underground storage of natural gas presented at the Natural Gas Section of the American Gas Association meeting in Houston, May 6-10, 1940.

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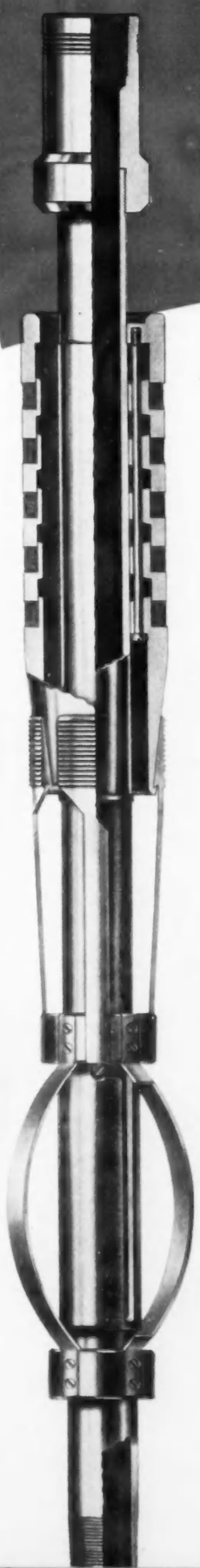

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feet more was withdrawn than had been injected. That withdrawal in excess of the volume injected during the first part of the cycle naturally came from the reserve contained in the structure prior to injection, and it could normally be expected that this withdrawal of original reserve would reduce the shut-in rock pressure below what it had been when operation was begun. However, in spite of the additional withdrawal, there was an increase in shut-in rock pressure of approximately 30 pounds between the beginning and the end of the first cycle. The average daily rate of withdrawal for the first cycle was 640,000 cubic feet, with a maximum daily rate of 1,200,000 cubic feet.

During the period between the first cycle withdrawal and the second cycle injection, the shut-in rock pressure in the reservoir built up to about 175 pounds, or an increase of 15 pounds. Only 51,965,000 cubic feet were injected during this cycle to obtain a shut-in rock pressure of 245 pounds, as against the first cycle injection of 77,189,000 cubic feet to obtain a shut-in rock pressure of 225 pounds. During the period from November, 1938, to February, 1940, withdrawals at 2 pounds pressure base totaling 160,158,000 cubic feet were made, or 108,193,000 cubic feet more was withdrawn than had been injected. The shut-in rock pressure at the end of the second cycle was 66 pounds. The average daily rate of withdrawal for the second cycle was 394,000 cubic feet, with a maximum daily rate of 905,000 cubic feet.

The erratic rock pressures have raised a question as to whether the reservoir volume was being reduced by water encroachment or whether gas was being fed into the reservoir from some other source. Using the original production in 1,000 cubic feet per pound pressure drop and the abandonment pressure of 83 pounds, the space within the storage reservoir was found to be approximately 13,100,000 cubic feet. Then, if the increasing pressure of the field was due to a water drive, and, if the field was not being repressured from gas outside of the structure, the reservoir space would be reduced to a figure which can be calculated by the relationship of pressure multiplied by the volume equals a constant. Thus, during the second cycle, the shut-in rock pressure was 192.5 pounds when the same amount of gas was supposedly in the reservoir as there was at the time when original production was discontinued, and when the shut-in pressure was 83 pounds. It would follow then, that since it requires a greater pressure to store the same amount of gas, the storage space would be smaller. The calculated reserve volume of gas stored in this reduced space at the higher pressure would be 88,600,000 cubic feet at atmospheric pressure base. However, 123,200,000 cubic feet, at atmospheric pressure base, have been withdrawn in excess of the volume injected, which is 34,600,000 cubic feet more than the calculated reserve. The shut-in rock pressure at the end of this withdrawal period was 66 pounds, which would indicate a reserve still remaining of 34,400,000 cubic feet at atmospheric pressure base. It can thus be seen that there would be a volume withdrawn and a volume still in reserve, which is in excess of the reserve first calculated by an amount equal to 69,000,000 cubic feet. This discrepancy has led to the conclusion that rock pressure is not being built up by a water drive, but that gas is slowly being fed to the reservoir structure from some other source. This conclusion is substantiated by inspection of the nature of the sand and the structure. The sand is known as the Dutcher and is a sedimentary deposit covering a great part of eastern Oklahoma. It is entirely possible that several minor accumulations adjacent to the reservoir structure are the source of this added volume of gas. Another possibility is that gas is slowly being fed to the well bore from shaly lenses far down in the reservoir sand.

The gas in reserve at the beginning of the project was purchased at 6 cents and injected gas has been purchased on a dump-load basis at 3 cents; thus, during the first cycle, the average cost of gas per 1000 cubic feet in the reservoir was slightly over 4 cents. All other costs of the project, including operation, maintenance, depreciation, interest, and taxes, amounted to slightly under 5 cents per 1000 cubic feet during this cycle. The total cost then was almost 9 cents per 1000 cubic feet. However, during the second cycle, these same costs were approximately 2 cents, 3 cents, and slightly under 5 cents. This variation of unit costs is, of course, a result of the excess of withdrawal over reserve and injected volumes. Estimated future storage and delivery cost show that unit costs decrease as injected volumes are increased, and that the unit cost is barely under 6 cents when 100,000,000 cubic feet at 2 pounds pressure base are injected and withdrawn annually. Thus, for the area in which the reservoir is located, it will be necessary to store 100,000,000 cubic feet or more each year for economical operation.

It is believed that this experiment has been of benefit in that all anticipated advantages were derived to a certain extent. At the present time, several similar projects are under consideration and will be put into operation as soon as the details of acquisition are completed.

Appendix

Reservoir Space

Withdrawal per pound drop in pressure over the period of original production of the field = 1,069,000 cubic feet per pound.

The total volume of gas remaining when production was discontinued at 83 pounds was:

$1{,}069 \times (83-0) = 88{,}727{,}000$ cubic feet @ 14.4 lbs. Absolute

The reservoir space would then be:

$$88{,}727 \times \frac{14.4}{83+14.4} = 13{,}118{,}000 \text{ cubic feet}$$

which for our purpose will be called 13,100,000 cubic feet.

Then $PV = \text{Constant}$, or, $P_1V_1 = P_2V_2$ and, on the chart, the pressure at zero volume during the second cycle was 192.5 pounds gauge so, if water drive were present, the reservoir space, V_2, would have been reduced to:

$(83+14.4)\ 13{,}100 = (192.5+14.4)\ V_2$

$V_2 = 6{,}167{,}000$ cubic feet

With this reservoir space then, the volume of gas, R_o, based on zero pounds absolute abandonment pressure, which is in reserve at 192.5 pounds absolute pressure, would be:

$$R_o = 6{,}167 \times \frac{(192.5+14.4)}{14.4} = 88{,}600{,}000 \text{ cubic feet}$$

However, as of February 15, 1940, 123,200,000 cubic feet at atmospheric pressure base had been withdrawn, which is 34,600,000 cubic feet more than the reserve at zero pounds absolute. The pressure at this time was 66 pounds gauge, which indicates a reserve, R_o', at zero pounds abandonment pressure of:

$$R_o' = 6{,}167 \times \frac{(66+14.4)}{14.4} = 34{,}400$$

Thus: Reserve based on water drive when zero volume was reached on second withdrawal	88,600,000 cu. ft.
Deliveries at atmospheric pressure to Feb. 15, 1940	123,200,000 cu. ft.
Remaining reserve as of Feb. 15, 1940	34,400,000 cu. ft.
	157,600,000 cu. ft.
Apparent volume in excess of estimated reserve	69,000,000 cu. ft.

DRILLING CONTRACTORS' NOTEBOOK

Helpful Suggestions For Those Interested In Drilling Methods

Operating Ideas Maintenance Hints New Rig Hook-ups

Published as a regular feature of THE OIL WEEKLY

1. MATERIALS HANDLING

Convenient Bailer Dump-Box of 3 Sections of Pipe Has Splash-Proof Feature

This bailer dump-box has many advantages over old-type wood-and-canvas box.

PORTABILITY and compactness along with speed are becoming essential keynotes of the current drilling campaign in Western Kansas. Contractors are finding that it is much to their advantage to build up and maintain equipment that will aid them in standardizing their set-ups on each new location, thereby cutting down on labor and hauling costs.

One of the more recent developments along this trend is the bailer dump-box. Instead of the familiar clumsy, mud-caked, wood-and-canvas box that formerly was commonly used, many contractors are building them of casing. They have an advantage in that they can be kept cleaner, both inside and out, they take up less space on the derrick floor, and, because of their compactness, can be more easily moved about or laid aside.

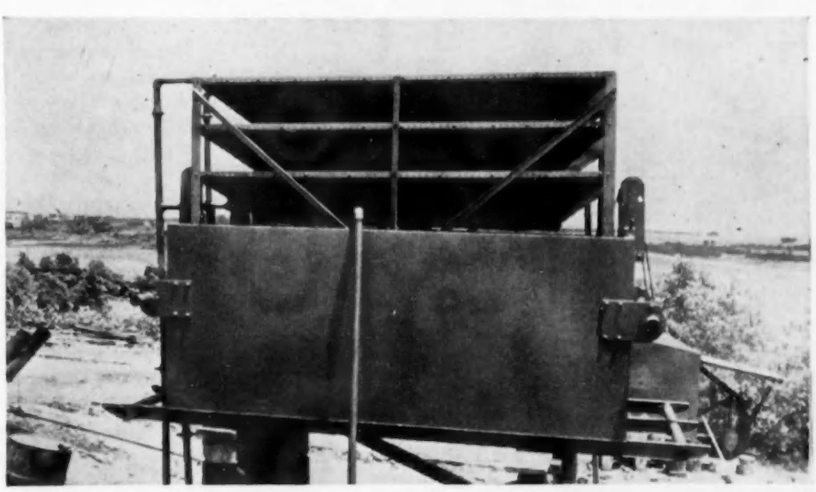
One contractor has devised a dump-box embodying several notable features. Instead of a single length of pipe of one size, it is made of two short lengths totaling about 12 feet, the upper length of 13-inch pipe being welded to the lower one of 9-inch. The short, swedged-out 9-inch nipple is inserted and welded upright in the upper end, instead of being merely attached to the outer surface, and is extended into the large pipe approximately 8 inches. This feature, combined with the greater volume of the upper portion of the box where most of the swirling and agitation takes place when the bailer is dumped, makes it virtually splash-proof—tending to eliminate many of the hazards attributable to a slippery derrick floor.

The box is kept in position and at the desired slope by a 2-foot nipple of 3-inch pipe welded to the bottom of the upper end. For convenience in swinging it up on to the rig floor with the sand line, or hoisting it on a truck, a sucker-rod bail is welded at the weight-center.

2. WATER COOLING

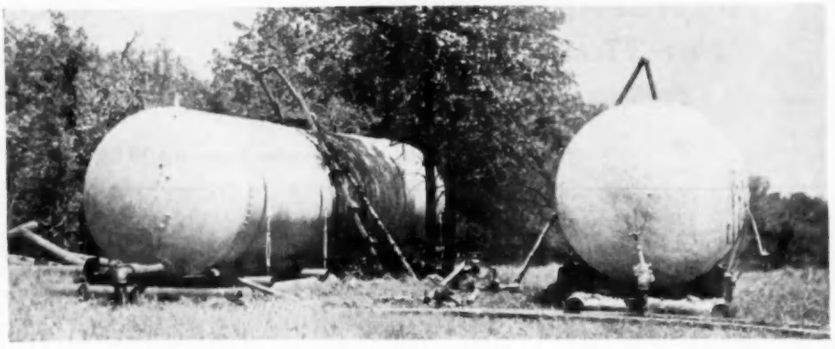
Tower Has Engine Jacket Louvres

ON A mechanically powered drilling rig in Montague County, Texas, Big-West Drilling Com-



This water-cooling tower, with engine jacket louvres, is mounted on skid base.

pany uses a water cooling tower mounted on a convenient skid-type foundation. The water tank is made of steel with an all metal louvre tower mounted within the box. A bar on each end of the box, fitted with a ratchet at each end, is employed to raise and lower the louvre with cables connected to the ratchet bar and the base of the louvre section. When moving, the louvre is let down into the water box, but when set up, the amount of louvres exposed to the wind is governed by the height that the louvre is raised above the rim of the box.

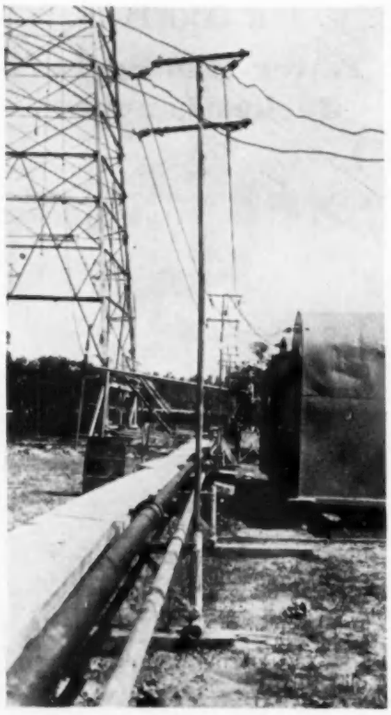


An ample supply of water for drilling in Cumberland pool is stored in these tanks.

3. RIGGING UP

Several Units Well Integrated

DUCKBOARD walkway stand, steam- and water-line support and wire pole are effectively integrated by an operator for use on his Gulf Coast rigs. The assembly is made of short sections of line pipe. Walkway planks and lines from the boilers to the rig floor are supported on two 3-foot sections of 1½-inch angle-iron, welded to either side of an 18-inch boot of 2½-inch pipe. A footing, made of a 10-inch section of 2½-inch pipe, and a brace of 1½-inch strap iron are welded to the boot to complete the walk and pipe-line support. An 8½-foot length of 1½-inch pipe is socketed in the boot to afford a pole for support of power lines. Two 15-inch sections of 1½-inch pipe serve as crossarms to which the insulators are permanently attached. A set of 10 such supports is sufficient to serve the ordinary rig lay-out, and will speed rigging up and tearing down, as well as reducing deterioration on pipe and walkway planks.



Duckboard walkway stand, steam- and water-line support and wire pole are integrated on this Gulf Coast rig.

4. RIGGING UP

Screw Jack Levels Drilling Boiler

UTILIZING a heavy screw jack at the center of a channel section curved to fit the front end of the boiler, one drilling company gives the support added stability by fitting each end of the arc with a heavy support of drill stem, which extends into a sleeve welded to the base and braced against transverse strains. Matching holes through the halves of these supports provide for pins locking the two together and fixing the height at which the boiler front is to be carried.

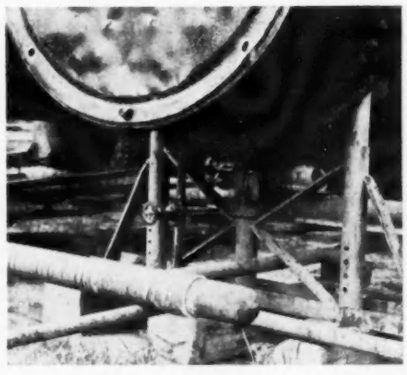
Use of these two side supports together with the jack in the center enables the channel to distribute the load evenly across considerable extent of smoke-box sheet, instead of concentrating it at one point, as might be the case were only the jack used.

5. WATER STORAGE

Steel Tanks Store Ample Supply

TWO steel cylindrical tanks make available in excess of 10,000 gallons of water for drilling purposes at a rig of Noble Drilling Company in the Cumberland pool, Marshall County, Oklahoma. Frequent cave-ins and high-pressure gas zones tax mud facilities in this area more than in the average Mid-Continent pool.

Foundations for the tanks have been made of 6⅞-inch pipe, with wire loops belting the tanks to their bases at 4-foot intervals. The tanks are joined with a centralized union from which the flow may be regulated with a gate valve.

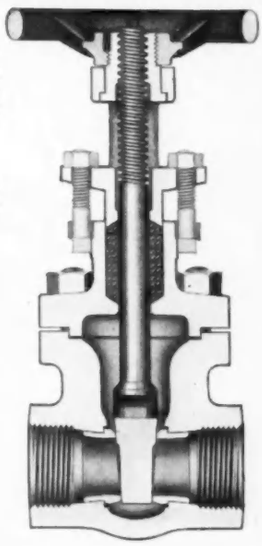


A three-point support under channel carrying smoke-box end of the boiler distributes the load and prevents overloading of the shell at one spot.

"SO THAT'S WHY THEY CALL THEM *tailor-made* SMALL STEEL VALVES"

Cross-section view of 600-pound No. 3607-X Radio-cast Steel wedge gate valve with Exelloy disc, seats, and stem for oil and oil vapor handling.

Crane Small Steel Valves are made with screwed, flanged, and socket weld ends.



No. 3653-X 600-pound Forged Steel angle valve with Exelloy trim.

No. 3692-XS 600-pound Radio-cast Steel vertical ball check valve with Exelloy to Steel trim.

No. 3656-X 600-pound Forged Steel globe valve with Exelloy trim.

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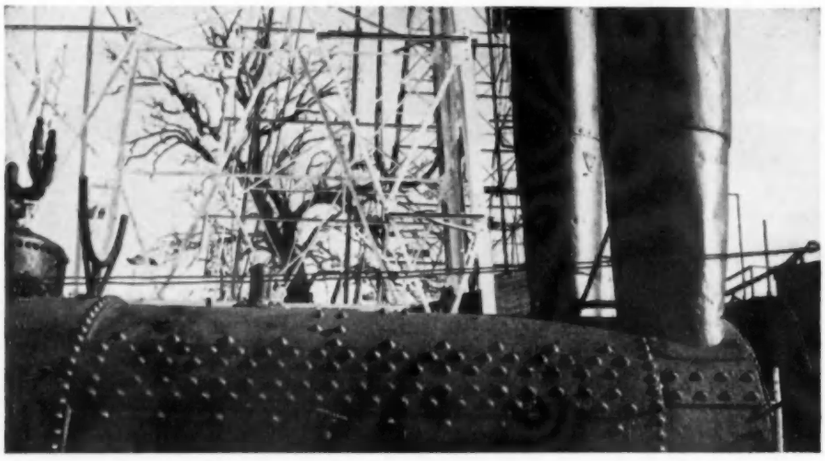
DRILLING CONTRACTORS' NOTEBOOK

6. MOVING

Hinge Allows Stacks to Fold Back Over Boiler to Rest on Cradle



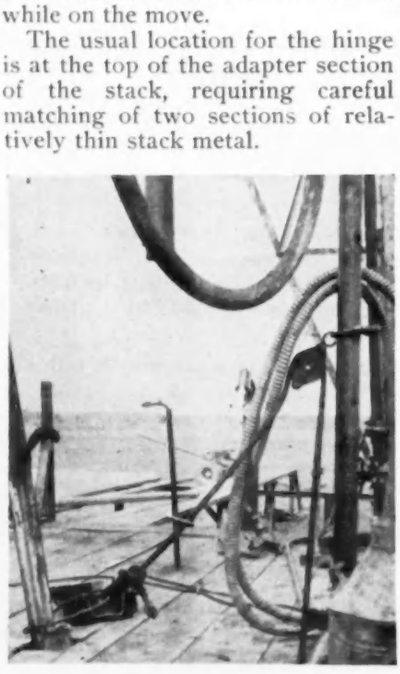
Attaching the stack to drilling boiler with a single hinge at shell line, with a formed breaching plate to give solid setting for service, facilitates setting up.

IN operations where frequent change of rig places a premium on the set-up, boiler stacks may be hinged to permit folding back over the boiler and carried in a cradle while on the move.

The usual location for the hinge is at the top of the adapter section of the stack, requiring careful matching of two sections of relatively thin stack metal.

One contractor sets the hinge on the boiler shell itself, allowing the entire stack assembly to rotate about this point and bringing the joint between folding and stationary parts at the shell line. This is made with a formed plate at the base of the stack, fitted closely to the shell curvature and carrying four-corner holes which match with threaded openings in the smoke box metal of the boiler.

With this method of hinging, a relatively heavy plate instead of thin stack metal is exposed to the rough handling of a move, and is much less likely to be damaged or distorted between periods of use.



The rope used to draw the kelly away from the rotary when setting it in the rathole is threaded through a sheave and a hole in the derrick floor to prevent men from becoming fouled when pulling the kelly over to the rathole.

7. SAFETY

Line Is Run Below Derrick Floor

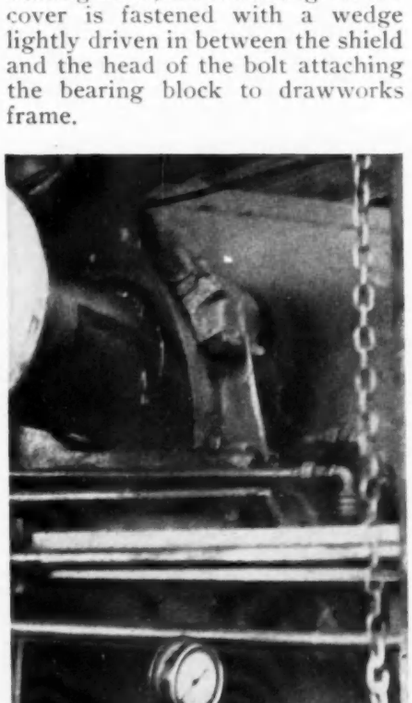
WHEN a rope is used to draw the kelly away from the rotary when setting it in the rathole, the line used for this purpose may be threaded through a sheave attached to an adequate hitch and then run through a hole in the derrick floor. On the sills a second sheave is used to change direction of the rope where it follows to a third sheave beneath the cathead. Coming up through another hole, it is conveniently coiled near the driller's side of the draw works where he can pick it up and use it when the kelly tool joints are broken out when preparing to come out of the hole for a round trip, or for making up a joint of pipe if a rathole connection is not desirable.

8. LUBRICATION

Guard Stops Excess Cathead Grease

GREASE, working out around the bearing of the cathead shaft directly behind the driller when he is in position at the brake, is thrown in a wide arc and is apt to spatter him unnecessarily at a time when he cannot sidestep.

Sultana Drilling Company fits the sheet-metal shield, cut from light tank steel, snugly around the bearing on the cathead shaft. Passing under the lugs carrying the bearing bolts, the lower edge of the cover is fastened with a wedge lightly driven in between the shield and the head of the bolt attaching the bearing block to drawworks frame.



A metal shield, cut to fit snugly around the bearing of the cathead shaft, intercepts flying grease.

HIGHLIGHTS IN THE WEEK'S NEWS

Allowables

Bureau Sounds Warning On Export Market Loss

Sounding a warning that severe restriction of oil exports may so offset increased domestic demand as to embarrass the industry, the United States Bureau of Mines on June 22 predicted that total demand during the next 3 months may be but little more than that of a year ago.

The bureau forecast that demand during July would require a daily average supply of domestic crude of 3,628,400 barrels which, while an increase of 8,100 barrels more than the estimated daily demand for June, will be 23,600 barrels a day less than the actual demand in July, 1939.

Pointing out that the low figure for the coming month is attributable chiefly to the decline in exports, the bureau again called attention to the heavy gasoline stocks, which in May decreased less than half the amount forecast.

Daily average crude production during the 4 weeks from May 5 to June 1, the report showed, was 3,787,000 barrels, while runs to stills were 3,629,000 barrels. During the period, domestic crude stocks increased on an average of 103,000 barrels daily, indicating a demand of 3,684,000 barrels per day, compared with 3,601,000 barrels estimated by the bureau.

"The increase in the domestic demand for motor fuel is being offset by the severe decline in exports so that the total demand in the third quarter may be less than 3 percent above last year," the bureau said. "This situation, coupled with the high inventories of gasoline, normally would indicate a curtailment of runs. However, this objective has not been attained because of the relatively large demand for light fuel oils and the necessity of building up depleted stocks. To correct this situation low gasoline yields and high distillate yields are indicated as essential.

"For August and September, no substantial increase in crude runs to stills over July is anticipated. The decline in crude exports is offsetting the increase in runs and the total demand for domestic crude oil may be less than last year."

Estimated domestic demand for motor fuel during July is 54,800,000 barrels, a gain of 8.5 percent over the same month last year, and the bureau pointed out that this indicated increase is comparatively high because last year's demand was abnormally low, and that, actually, the general trend in domestic demand for motor fuel is only about 6 percent higher than in 1939.

Forecasts by the principal exporters of motor fuel indicate that foreign shipments will be very low in July, and the bureau estimated the total for the month at 2,000,000 barrels, which is 400,000 barrels less than the estimate for June and 1,585,000 barrels under the actual exports in July a year ago.

The bureau explained that stocks of finished and unfinished gasoline were 103,563,000 barrels on April 30, and that figures of the American Petroleum Institute show a decrease of only 1,940,000 barrels during May, which would make stocks approximately 101,600,000 barrels as of May 31, an amount far above the level of a year ago.

"If the industry continues to run sufficient crude to supply the demand for other oils," it was said, "adequate reduction in gasoline stocks cannot be made at the present yields. The bureau estimates a possible reduction of 5,600,000 barrels in finished gasoline stocks in July."

Benzol and direct sales of natural gasoline are estimated at 1,100,000 barrels, making refinery production of gasoline 50,100,000 barrels, which is distributed among the various districts as follows:

East Coast, 6,720,000 barrels; Appalachian, 1,930,000 barrels; Indiana-Illinois, 10,050,000 barrels; Oklahoma, 2,810,000 barrels; Kansas - Missouri, 2,630,000 barrels; Inland Texas, 3,630,000 barrels; Texas Gulf Coast, 12,400,000 barrels; Louisiana Gulf Coast, 1,500,000 barrels; Inland Louisiana-Arkansas, 890,000 barrels; Rocky Mountain, 1,350,000 barrels; and California, 6,190,000 barrels.

Natural gasonie to be blended at refineries is estimated at 5.55 percent of the total refinery gasoline production, or 2,780,000 barrels. In order to provide for the demand for other oils, the yield of straight-run and cracked gasoline is figured at only 43.1 percent, a yield which, applied to the output of 47,320,000 barrels of gasoline, gives crude runs of 109,780,000 barrels, or 3,541,300 barrels a day. Foreign crude runs are estimated at 3,200,000 barrels.

Pointing out that Canada, France and Japan have been the principal foreign markets for United States crude, the bureau commented that exports to France averaged more than 1,000,000 barrels monthly for the first four months of this year, but recent war developments not only will curtail that market but may force oil, formerly marketed in France from other countries, into competition with United States oil in its remaining export markets. On this basis, the bureau estimates that crude exports in July will be 3,700,000 barrels, or 900,000 barrels less than forecast for June, and 3,600,000 barrels under the actual exports in July, 1939.

With crude to be used for fuel, and losses estimated at 2,200,000 barrels, the bureau found the total demand for domestic crude in July to be 112,480,000 barrels, or 3,628,400 barrels daily. Allocations among the producing states is shown in an accompanying table.

Bureau Allocations

State	July	June
Texas	1,339,400	1,344,600
California	593,900	593,700
Oklahoma	403,900	408,600
Illinois	402,300	395,600
Louisiana	278,100	274,700
Kansas	159,400	159,000
New Mexico	106,100	106,700
Wyoming	80,600	73,000
Arkansas	67,400	66,700
Michigan	61,600	62,000
Pennsylvania	47,900	49,400
Montana	18,100	18,300
Kentucky	14,200	15,000
New York	14,000	14,000
West Virginia	10,000	11,000
Mississippi	9,700	7,000
Indiana	9,000	8,000
Ohio	8,000	9,000
Colorado	4,800	4,000
Total	3,628,400	3,620,300

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Oklahoma Allowable To Be Same; Above Demand Figure

Oklahoma's crude production allowable for July will remain unchanged under the 90-day order effective May 1, which calls for 408,100 barrels daily. The United States Bureau of Mines estimate of market demand for the state is 403,900 barrels daily in July.

Louisiana July Allowable Gives South Slight Increase

The Louisiana Conservation Commission set the oil allowable for July at 280,371 barrels, an increase of 205 barrels per day over the June allowable. South Louisiana was increased 742 barrels to 220,011 barrels and North

Louisiana fields were reduced 537 barrels to 60,360 barrels. Cotton Valley (Bodcaw) was increased to 7360 for July over 6897 for June; Lisbon was cut 500 barrels to 4500 barrels and Rodessa was cut 500 barrels to 19,500 barrels. Sligo was given 294 barrels daily allowable and Shreveport was left at 4500 barrels. Remaining fields were cut from 22,000 barrels for June to 21,706 barrels for July.

Vander Leck's Resignation Tabled for Thirty Days

The resignation of Lawrence Vander Leck as chairman of the Central Committee of California Petroleum Producers and state oil umpire, tendered last week, has been tabled for 30 days. At the request of the committee, Vander Leck has agreed to retain office until a successor can be selected.

Vander Leck's resignation was tendered to become effective immediately, and it is indicated, grew out of a disagreement of policy among committee members and the chairman. Vander Leck made a protest with the committee over extensive salary cuts, declaring they would destroy the effectiveness of his staff.

Exports

Exports of Gasoline and Crude Halved in May

Developments in the European situation in May reduced United States' exports of crude petroleum to slightly more than half the quantity shipped abroad in the same month last year, and more than halved exports of gasoline, it was disclosed by figures compiled by the Department of Commerce last week.

Crude-oil exports for the month were placed by the department at 4,886,000 barrels, valued at $6,333,000, against 8,643,000 barrels, valued at $11,307,000, last year, and brought the five-month total down to 20,785,000 barrels, valued at $27,680,000, from 29,118,000 barrels, valued at $37,654,000, a year ago.

Motor fuel shipments for the month were but 1,546,000 barrels, valued at $6,008,000, compared with 3,874,000 barrels, valued at $9,632,000, in May, 1939, and for the five months, exports were 8,419,000 barrels valued at $28,361,000, compared with 15,016,000 barrels valued at $37,059,000.

Exports of gas oil and fuel oil also declined, totaling 3,148,000 barrels, valued at $3,750,000 in May, against 5,541,000 barrels valued at $6,655,000 last year, and 13,337,000 barrels valued at $16,228,000 for the five months, against 19,432,000 barrels valued at $23,345,000.

Lubricating oil exports, however, showed an increase for both May and the five-month period, totaling 1,157,000 barrels valued at $9,318,000 for the month, against 973,000 barrels valued at $6,709,000, and 5,630,000 barrels valued at $51,870,000 for the five months, against 4,122,000 barrels valued at $29,303,000.

Imports of crude continued above last year, May receipts having been 4,266,000 barrels valued at $3,074,000 against 4,186,000 barrels valued at $2,820,000; for the five months, imports were 14,692,000 barrels valued at $10,713,000, against 12,311,000 barrels valued at $8,332,000.

There were also imported in May $1,358,000 of gas oil and fuel oil compared with $1,046,000 last year, bringing the total for the five months to $11,727,000, against $4,703,000. This oil, the department explained, was partly oil used for refueling vessels and for refining and export.

Defense

Phillips Declares Compact Will Cooperate in Defense

Governor Leon C. Phillips of Oklahoma, chairman of the Interstate Oil Compact Commission, last week wired President Roosevelt that compact states were ready, on short notice, to take any action necessary to the national defense.

Text of his wire follows:

"We have taken notice of your reported statements to the press that the oil industry in the states of the Interstate Oil Compact should meet instantaneously any changes in the world oil situation.

"I agree heartily with that statement. Let me assure you that the compacting states, through the Interstate Oil Compact Commission, are ready to take whatever action is required on short notice to produce all oil necessary for all elements for national defense, and produce it without waste.

"If there is no legislation limiting or hampering the extension of pipe lines, there is no reason why the oil industry cannot meet any demand of the regular market, or of our government for an adequate supply of oil. In any plans to furnish petroleum products in any quantities, domestically and for export, which may be adopted, you may rest assured the Interstate Oil Compact Commission will give you its full support and cooperation."

Defense Council Finds Oil Industry Is on Efficient Basis

Activities of the Council of National Defense with respect to the oil industry this week were seen by Dr. Robert E. Wilson, consultant on petroleum problems, as directed mainly toward elimination of "bottle necks" between producer and consumer.

Taking over his new task with the advisory commission, Dr. Wilson pointed out that, in common with many other industries involved in the national defense program, there is an adequate supply of raw material but that there are interferences with its supply for consumption.

He explained that these "bottle necks" have not yet been traced in detail, but agreed that transportation between the Gulf and the East Coast was one of them.

Administration officials, it was said, see no necessity for "organizing" the oil industry, which already is on a highly efficient basis, fully equipped and capable of meeting needs considerably beyond those now envisioned and able promptly to construct such facilities as may be necessary to meet demands beyond the present capabilities.

Dr. Wilson pointed out that, "in general, the industry is in pretty good shape" and no trouble is being encountered in obtaining crude or refined products. However, he added, there may be some special products for which additional facilities will be required.

First efforts of dealing with the oil problem will be directed to determining where the "bottle necks" exist and to developing plans for their elimination. The transportation system, apparently the most important phase of this effort, has been under study by governmental agencies for some time, and a number of suggestions have been taken under consideration including, it is understood, a proposal for the government to finance a pipe line between the Gulf producing area and strategic points on the East Coast. Other proposals have been for construction of a number of tankers and for a greater development of railroad transportation of oil.

There is also some suggestion that facilities for the production of aviation gasoline may not be adequate when the government's air force expansion program gets under way, but it is believed the necessary refinery capacity can be developed in step with the expansion of aviation facilities.

Dr. Wilson emphasized that no regimentation of the oil industry is contemplated under the national defense program. In the event of war, however, plans for full control of oil are said to be incorporated in the army and navy mobilization program, which would bring all industry under federal regulation.

Brown Warns Against Radical Legislation Under Defense

Warning the oil industry to guard against enactment of adverse legislation under the guise of advancing the national defense program, Russell B. Brown, general counsel for Independent Petroleum Association of America, last week pointed out that in adoption of the 1940 revenue bill Congress narrowly averted the inclusion of the Connally amendment, under which the deduction for depletion would be cut from 27½ to 13¾ percent, with a limit on its application to 25 instead of 50 percent of net income.

In his weekly bulletin, Brown pointed out that "all manner of radical proposals" have been made, for many of which there seems no justification. He urged that a close watch be maintained over the activities of Congress and that the industry be prepared to protest any undesirable legislation not actually essential to meet the emergency.

Besides the Connally amendment, he explained, the Senate adopted the La-Follette amendment which would have imposed heavy taxes on corporations with small capitalization whose profits might appear disproportionate. Both were rejected by the House of Representatives.

"The fact of its adoption by the Senate indicates the willingness of some groups to take advantage of our national interest in preparedness to slip over, without notice or warning to the industry, a change in the law which would have worked very serious harm to the smaller units in the petroleum industry," Mr. Brown said, in discussing the Connally amendment.

"It should be noted that the bill, while introduced by a member of the Senate, it is understood, was not written by him but was a Treasury Department proposal. What other 'jokers' might have been in the bill, in addition

to the slash in the depletion allowance, is not known."

The IPAA counsel also directed attention to the administration's proposal for an all-American cartel, with the United States acquiring surplus crops and raw materials of the other American countries for resale abroad, in an effort to keep totalitarian countries from invading Latin America.

"With oriental markets greatly reduced, with a European market highly problematical, it appears that the only available markets for much of these exportable surpluses would be in this country," he said. "Our ability to take all these exports which have formerly gone to Europe and Asia seems at issue. If the oil which other countries in this hemisphere formerly shipped to Europe, Africa and Asia is to find a market here then the work which has been done by the industry, by the oil states and by the federal government in recent years may be seriously affected."

Pipe Lines

Propose Gas Line From Texas Panhandle to Milwaukee

Independent Natural Gas Company, subsidiary of Phillips Petroleum Company, has applied to the federal power commission for authority to construct an 887-mile natural gas pipe line from Sherman County, Texas Panhandle, to Milwaukee. The estimated initial construction cost was given at $28,698,000.

The proposed line would extend across parts of Texas, Oklahoma, Kansas, Missouri, Iowa, Illinois and Wisconsin, with laterals extending to distribution companies and industrial consumers.

Phillips Petroleum Company now holds under oil and gas lease approximately 224,266 acres of proven gas properties in the Texas Panhandle with natural gas reserves estimated at 2,800,000,000,000 cubic feet, with additional holdings of 150,768 acres in the Hugoton field of Kansas with estimated reserves of 990,000,000,000 cubic feet.

Building Short Line for Olla Pool, LaSalle Parish

Placid Oil Company, headed by H. L. Hunt, Dallas, Texas, is building a 10-mile crude line from the recently discovered Olla pool, LaSalle Parish, Louisiana, to a tank car rack at Searcy. The oil will be transported by rail from the latter point to tanker terminal at Good Hope, Louisiana. The line will comprise 6 miles of 6-inch and 4 miles of 4-inch welded pipe.

Benedum-Trees Asks for Exemption from Gas Act

Application for exemption from the provisions of the Natural Gas Act was filed with the Federal Power Commission last week by Benedum-Trees Oil Company, Pittsburgh, Pa.

The company explained that it is primarily engaged in the business of producing oil, principally in the states of Texas, Oklahoma and Arkansas, and that its properties in West Virginia, Kansas and Ohio are productive of natural gas. The natural gas thus produced, it was stated, is sold at the mouth of the wells, and is gathered and transported by the purchasers, and its disposition by the purchasers is not known to the applicant other than a "belief" that gas produced in Ohio is utilized by the purchaser in the city of Cleveland.

On the basis of these facts, the company contended that it is not engaged in the transportation of natural gas in interstate commerce and should not be classified as a natural gas company coming under the act.

Oklahoma's Cumberland Pool To Have a New Outlet

Transportation outlet for The Pure Oil Company's Cumberland pool strike in southern Oklahoma is to be provided by construction of a 5½-mile 4-inch line to a tank car rack at Aylesworth. The pipe will be supplied by Stanolind Pipe Line Company through salvaging a 13½-mile idle unit near Graford, Texas. The O. C. Whitaker Company was given the contract to take up the old line and install the Cumberland outlet.

Building 25-Mile Gas Line To Serve McCook, Nebraska

The Kansas Pipe Line & Gas Company is constructing 25 miles of line from Cambridge to McCook, Nebraska, with laterals to Indianola and Bartley.

The line is necessary to serve McCook, where the gas distribution system was purchased by Aksarben Natural Gas Company for a switch from artificial to natural gas.

Complete Crude Line to Serve West Kansas

Stanolind Pipe Line Company last week started test runs on its new crude line from the Bemis pool, Ellis County, Oklahoma, to a point near Washington, Washington County, Kansas, where it connects with the company's trunk line from Wyoming to Missouri.

The line, which cost about $1,500,000, furnishes an additional outlet for West Kansas fields.

Atlantic Refining Starts New Delaware Terminal

The Atlantic Refining Company has started construction of a new terminal at Fort Mifflin, on the Delaware River, for the reception of tanker shipments of crude oil, chiefly from the Texas oil fields. Completion is scheduled for late in the fall.

The dock structure will be of concrete and will be capable of accomodating three of the oil company's new 550-foot tankers at the same time. Crude petroleum will be discharged from the tankers into four shore tanks with a capacity of 80,000 barrels each. From the new terminal the oil will be pumped through two 16-inch pipe lines to the company's refinery at Point Breeze on the Schuylkill River, a distance of about five miles.

JEFF HAWKS, scouting department, Sinclair Prairie Oil Company, has been transferred from Tyler to Shreveport, replacing Harry Norris, who was recently moved to Mattoon, Illinois.

Washington

Ickes Asserts Government Right to Elks Hill Section

Basing his action on a recent decision of the United States Supreme Court awarding title to Section 36 of the Elk Hills Naval Oil Reserve to the United States, Secretary of the Interior Harold L. Ickes on June 27 ruled that title to Section 16 of the same reserve belongs to the federal government.

Announcing his decision, Ickes declared the ruling "may prove of inestimable value to future national defense" and pointed out that, although oil has not been developed in Section 16, that area lies within a few miles of Section 36, "characterized as one of the most valuable square miles of oil land in the world."

In holding that title was vested in the federal government, Secretary Ickes rejected the appeal of the General Petroleum Corporation of California and Thomas A. O'Donnell and Hamer I. Tupman, who had protested that they were entitled to the property through acquisition from the state of California, and upheld findings in the United States General Land Office that, because it was known to be mineral in character at the time official survey was accepted in 1903, Section 16 was not covered by the federal school land grant to the state. Consequently, he held, "title to this section has never vested in the state of California or its tranferees, but has remained and now is in the United States."

Both of the Elk Hills cases had their background in legislation passed by Congress in March, 1853, under which it was stipulated that Sections 16 and 36 of every township of public lands in the state of California were to be granted to the state for the use of the public schools. Subsequently, the courts held that this grant did not apply to lands of known mineral character, which were excluded in conformity with the general policy of the federal government to reserve public lands chiefly valuable for minerals for the United States.

When oil development took place in the Elk Hills territory, around 1910, private prospectors bought up portions of the school land sections and laid claim to title on the ground that the mineral character of the property was not known at the time the approval of the survey of the lands was given by the General Land Office in 1903.

Challenging this claim, the Interior Department began proceedings involving the right to title in Section 36, while the issue in respect to Section 16 was temporarily held in abeyance pending settlement of the controversy over the other section. The Section 36 case recently was finally decided by the U. S. Supreme Court, which held title lay with the federal government, which was awarded $7,138,297 in damages from Standard Oil Company of California.

The Section 16 controversy was heard by a register of the land office in California in December, 1935, and in 1937 a report was made to the commissioner that the section was known to be mineral in character in 1903, and therefore was the property of the government. The register's opinion was affirmed by the commissioner of the land office on March 24, 1938, and the oil company and other claimants appealed to the Secretary of the Interior.

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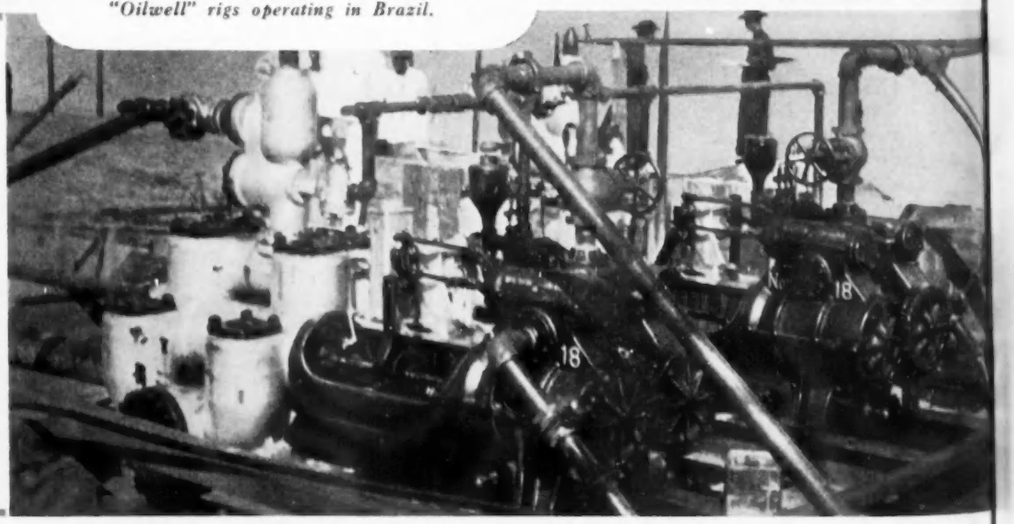

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MEN IN THE INDUSTRY'S NEWS

MARSHALL R. JOY, Michigan resident manager for Cities Service Oil Company, Mt. Pleasant, was named chairman of the Michigan chapter of the American Petroleum Institute, Division of Production, when the group was formally organized June 21. The group plans to conduct five general meetings each year, with the next to be held in September.

Other officers named were C. C. Irby, Turner Petroleum Company, Mt. Pleasant, first vice chairman and program chairman; A. H. Ledbeter, McClanahan Oil Company, Mt. Pleasant, second vice chairman, and Allen Morrow, C. L. Maguire, Inc., Mt. Pleasant, secretary-treasurer.

Members named to the advisory council were Glen Sleight, Sun Oil Company; Walter Leonard, Jr., Rowmor Corporation, and Gerald Cotter, attorney, all of Mt. Pleasant; H. L. Donheiser, The Pure Oil Company; Glen Caley, Goll-Graves-Mechling, Inc.; Jed Mabeius, Gulf Refining Company, and George Bell, Smith Petroleum Company, all of Saginaw; Kurt deCousser, Socony-Vacuum Oil Company, and F. R. Frye, Michigan Geological Survey, both of Lansing, and Harold McClure, Rex Oil & Gas Company, Alma.

JOHN EMERY ADAMS, geologist for Standard Oil Company of Texas in West Texas the past 12 years with headquarters at Midland, has been transferred to New Orleans, where the company is carrying on its most active operations. Adams was elected president of the West Texas Geological Society last January. R. D. White, who has been stationed at the company's division headquarters at Houston, will fill the Midland vacancy.

"BUD" CLARK, Gulf Oil Corporation presented a paper entitled "Geology of the Greater Seminole Field" before the Seminole Chapter of the American Petroleum Institute, production division, June 21. Officers recently elected by the Seminole Chapter are. Coxy Evans, Cities Service Oil Company, chairman; M. A. Wright, Carter Oil Company, vice chairman, and J. J. Dillon, Empire Oil Company, secretary-treasurer.

F. J. GRAVIS is the head of the recently organized Rutland Oil Corporation, San Antonio, which has just completed its first wildcat operation. The company drilled a failure in Caldwell County, near Lockhart. Others in the company are H. J. Gravis, vice president, and T. H. Phillips, secretary.

P. W. APPLEBY, drilling contractor with headquarters at Odessa, Texas, has established a branch office in the Panhandle Building, Wichita Falls. J. L. Nix, drilling superintendent, is in charge, having moved his family to Wichita Falls.

BILL LEAVITT, graduate of Oklahoma University, is now a draftsman in the geological department of Amerada Petroleum Corporation at Tulsa.

H. D. PATRIDGE, manager of purchases for Indian Territory Illuminating Oil Company at Bartlesville, is attending the annual convention of the Kiwanis Club in Minneapolis. Patridge is lieutenant governor for the northeastern district of Oklahoma and has served a term as president of the Bartlesville club.

A. L. DERBY, chairman of board of Derby Oil Company, Wichita, was honored at a recent celebration on the twentieth anniversary of the firm. Other 20-year men receiving recognition included: C. A. Keller, sales manager; E. Wasser, secretary; H. A. Haltiwanger, land department; John Schell, pipe line superintendent; J. F. Gibson, refinery; Albert Eckel, pumper; R. H. Boyd, gauger; J. H. Schell, pipe line engineer; E. L. Edwards, pipe line foreman; J. B. Davis, pipe line pusher, and R. H. Wilks, pumper.

HERBERT H. GILBREATH, veteran driller for Gulf Oil Corporation in Texas, returned to his Fort Worth residence last week after spending three months in England, where he was engaged in drilling a wildcat for a subsidiary near Stockton-on-Tees. The company cut short its exploratory operations because of bombing raids on nearby objectives. Other members of the crew returning to the United States included T. H. Wallace, Houston; M. J. Sparks, Rosenberg, Texas; J. C. Dugas, Lake Charles, Louisiana, and H. B. Galey, of Missouri.

HAMILTON McRAE, Midland attorney, was elected president of the Permian Basin Association at the first anniversary meeting held June 21-22 at Odessa. The organization, supported by West Texas oil, land and business interests, is taking an active part in oil proration, legislation and tax matters. An oil equipment show was staged in connection with the Odessa gathering of the membership.

HOMER EASTERWOOD, L. A. Cage and F. M. Boykin, Jr., have organized Palm Meadow Oil Company with offices in Taft, Texas. The company, comprised of operators with production in the Midway field, is putting down a test in the area.

RALPH E. FAIR, who formerly had his headquarters in the Continental Building, Dallas, moved his offices and the several concerns he heads to San Antonio, establishing new offices in the Milam Building. He has production in the Rio Grande Valley.

ASA LEE MAYES, Mary Ann Mayes and Bert B. Barefoot, Jr., have organized Mayes Oil Corporation as an Oklahoma corporation with headquarters in Oklahoma City.

M. C. LEVERETT, research engineer for Humble Oil & Refining Company, delivered a paper on "Behavior of Fluids in Sand with Particular Emphasis on the Roll of Capillarity" before the Houston Geological Society last week.

C. C. BROWN, division superintendent, and D. M. Davis, division geologist for The Pure Oil Company, both of Houston, are in Corpus Christi in connection wtih the deep test being drilled by the company on Mustang Island.

PARKER L. MELVIN, Towne-Melvin Oil Company, Bradford, was elected president of the Pennsylvania Grade Crude Asociation when the organization held its annual meeting at Bradford June 20-21. He succeeds W. F. Clinger, Clinger Oil & Gas Company, Tidioute, who continues as a director.

Other officers named were A. E. Booth, Bradford, first vice president; O. W. Walchli, Wellsville, New York, second vice president; Samuel Messer, Quaker State Oil Refining Corporation, Oil City, treasurer; W. R. Reitz, Quaker State Oil Refining Corporation, Oil City, assistant treasurer; John A. Beck, Pennsylvania Refining Company, Butler, corresponding secretary; J. E. Moorhead, executive secretary; S. F. Pratt, assistant secretary, and F. B. Dow, general counsel.

Directors named besides Clinger, are: D. T. Andrus, Bradford; Beck; Booth; E. C. Breene, Oil City; W. J. Brundred, Brundred Oil Corporation, Oil City; H. M. Carruth, Canfield Oil Company, Cleveland; E. M. Craig, Freedom Oil Company, Freedom; C. R. Daugherty, Butler; A. D. David, Bradford-Penn Refining Company, Clarendon; C. M. Davison, Standard Oil Company of New Jersey, New York; W. J. Healy, Healy Petroleum Company, Bradford; D. E. Hoffman, Tide Water Associated Oil Company, New York; Otto Koch, Kendall Refining Company, Bradford; H. R. Lewis, Conewango Refining Company, Warren; H. A. Logan, United Refining Company, Warren; D. B. McCalmont, Franklin; John McCoy, Columbus, Ohio; Melvin; Messer; F. E. Richart, Wellsville, New York; D. T. Ring, Preston Oil Company, Columbus, Ohio; C. E. Streeter, Bradford; C. L. Suhr, Pennzoil Company, Oil City; T. P. Thompson, Jr., Bradford; S. M. Vockel, Waverly Oil Works Company, Pittsburgh, and Walchli.

RUDY EDMOND, a graduate of University of Iowa, is in the exploration department of Shell Oil Company in Tulsa. Other graduates now associated with the company are: Ray Dimit, University of Pittsburgh, is a trainee in the production department and hails from Bartlesville; Robert L. Rankin, Carnegie Tech graduate from Vandergrift, Pennsylvania, is in the mechanical engineers division, and Kent Kimball from Oklahoma University is in the geological department.

J. C. STIRLING, engineer with Stanolind Pipe Line Company at Tulsa, presented a colored motion picture which he took during recent construction of a pipe line from Lance Creek, Wyoming, to Salt Lake City, Utah, before a noon luncheon of the Tulsa Petroleum Electrical Club recently.

PAUL WEAVER, Gulf Refining Company, will present a paper on "Radio Activity of Sedimentary Rocks" before the Gulf Coast Section of the A. I. M. E., meeting July 2 at Houston.

PHILLIP S. SCHONECK, geologist with Atlantic Refining Company at San Antonio, is recovering from an operation.

WALTER and **PAUL HENSHAW,** constituting the firm of Henshaw Brothers,

are moving their offices from the Alamo National Building to the Smith-Young Tower, San Antonio, as part of an expansion program.

CLARENCE NORSWORTHY, head of the Norsworthy Production Company, Dallas, was a South Texas visitor last week. He is carrying on an extensive wildcatting program in the Fagan sector of Refugio County.

G. C. O'CONNOR, former West Texas scout for The Pure Oil Company and more recently on special assignment work in North Texas, has been moved to Shreveport to cover the North Louisiana and South Arkansas district.

J. J. ARPS, Shell Oil Company and formerly stationed at The Hague, after visiting and inspecting the Maracaibo oil fields in South America, has returned to the Tulsa office.

RAYMOND R. RICE, engineering department of The Texas Company, has been transferred from Tulsa to the Seminole district.

J. C. POOLE, geologist for Barnsdall Oil Company at Corpus Christi, has resigned to open offices as consulting geologist in the Nixon Building, Corpus Christi.

FRANK WEST, trainee with Shell Oil Company, has been transferred from London, England, to Houston.

DR. F. BRONS, with Shell Oil Company, has been transferred from The Hague to the California offices.

DIED:

WILLIAM H. BERG, 58, president of Standard Oil Company of California, died June 26 at his home in Burlingame, California, following a heart attack. He started with the company in 1902 as a stenographer, becoming successively an oil scout, chief clerk, general superintendent, assistant manager, manager of lands and leases in the producing department, and general manager of the foreign producing department. He was named a director of the company in 1924, and elected president in 1937.

CARL KURZ, 85, who opened the shallow Somerset field in South Texas in 1912 while drilling an artesian water well, died June 23. Kurz built a refinery at Somerset during the area's development.

A. L. CLARK, 59, production superintendent for Carter Lease, Inc., died June 22 at his home in Breckenridge, Michigan, following a heart attack. He came to Michigan nine years ago from Bremen, Ohio.

THOMAS M. DOUDEAU, 47, an accountant for Texon Oil & Land Company the past 6 years, died June 23 in a Fort Worth hospital. He had been ill several months.

PAUL C. POWELL, 58, auditor-inspector for Gulf Oil Corporation at Victoria, Texas, died June 17. He had been with the company for 30 years.

Paul Peebles:

Finds the Political Situation in Texas Humorously Confusing

My dear Cleopatra:

Cleo, hunny, it is a good idea you have got writing to ask me about politics, because with women voting it has put a big burden on us men to tell the women how to vote if they want to be told, and this year it aint much chance of anybody telling anybody anything on account of it is so much war talk in the newspapers and on the radio that the radio aint hardly got time to tell you what beer to drink. Right in the middle of Paris being taken they stop to tell you about somebody got a sale on bathing suits, and anyway if you had a good memory you would know what they was going to say from what they said day before yesterday.

But to tell you about the political situation, it aint must to say yet about the big show of the nation on account of the republicans is having double trouble finding out who to run while the war situation is making them wonder why. Then the democrats is waiting to see what Franklin will do about running again, and if they knew it would be a big help to the republicans also. Seems most people are resigned that he will go for a third term, but I am not so sure on account of if I was him and my wife already was signed up for contracts with newspapers and radio and the kids all got good jobs, well I would retire and let somebody else run things for awhile, espeshul since he has said there aint going to be no more new millionaires and if he keeps on he will be getting a million in salary, and it ought to be all clear with his wife working and not no rent to pay.

But down here close to home it is another question. It is so many running for governor that even one of the candidates could not name all of them he is running against. So less you and me just think about these three:

O'Daniel. He is in and still against professional politicians, even if he has kinder lost his amateur standing. He aint saying much about passing any more bisquits, on account of they are getting pretty cold. He aint never been to war and don't want no war, or the last time I heard him any guns to fight a war with.

Thompson. Bugger Red went to war alright and is rarin' to go again. He is calling O'Daniel by his first name and asking him where he was in the last war. He is so full of patriotism on account of winning the last war that he cant hardly talk about the governors race and kid O'Daniel about what he aint done, and he is going to fix it all up by putting a tax on oil. Red was in the infantry in the other war but I guess he would be in the cavalry in the next one on account of how expert he is in changing horses.

Sadler. Now there is a statesman. Him and the chairman of the railroad commission have teamed up on Thompson and wont let him say anything any more about what is going on, and Jerry talks so much that Lon dont have no chance either.

So far as I have heard, Jerry did not go to the last war, on account of maybe of his hotel work. But he is plenty war minded now and has come through with a scheme for national defense that has great possibilities. He wants to pour oil on the Rio Grande and set it afire. Now hunny that is a proposition well worth considering.

The Rio Grande river is some river, even if there was not so many cowboy songs about it. Even I aint seen it except in spots, because it starts up in Colorado and meanders all around getting down to Brownsville. It is so long that it comes in sections and the Mexicans call it by three names after it gets where they can see it. I doubt if anybody has really measured it from El Paso to Brownsville where it is the border, but some say it is 1300 miles. It ought to average 100 yards across it, counting sloughs and eddies. I aint got no slide rule handy, but that ought to give it a water surface of 2,059,200,000 square feet. I guess Jerry's plan would call for enough oil on it to burn and if a foot would do for a day (if it burned slow) it would take 411,240,000 barrels to start with, and I guess it would be needed at least a week before the enemy laid down in despair.

Just think of that, honey. If Jerry could just get the army to put on one fire drill we could quit worrying about the lost market in Europe. And mind you, those figures do not allow for evaporation and adjustment to temperature.

Jerry has overlooked one feature, and that is they still could fly over the fire, so I am going to make him a suggestion that will make this scheme of his air tight and also cure up a situation that has got a lot of people worried. This is the way we will do it. Back behind the fire we will run some flares high up in the air and turn all the gas that is being wasted in the fields and all the more we need from the Panhandle where it is shut in, and let the gas escape high in the air. Then if airplanes try to get through they either will backfire and burn up or the air will be so light they will fall and bust up themselves, and the country will be safe on account of Jerry had such a good idea.

So you see, honey, it is not possible to keep business out of politics. See how it works out to everybody's benefit. Keeping that blaze on the Rio Grande would cure the production situation and the flares would take care of the gas without no waste. Then with Thompson's tax on oil and gas there would be enough money for Pappy to pass the bisquits. The only trouble is that to do all that would take three governors which is against the constitution, and anyway this state has had a lot of experience just running out of control.

So less wait awhile on deciding who to vote for. Maybe the newspapers will get in the names of some more candidates before the election and we will want to talk about them.

Your loving Paul.

Crude Runs and Gasoline Output Reach New Peaks

The industry's statistical situation turned less favorable in the week ended June 22, as crude oil production approached the all-time high of last August, while refinery runs and gasoline production established new records. Gasoline stocks continued to decrease, but not so rapidly as in the preceding two weeks. Heavy seasonal accumulation of light fuel oil stocks continued, and inventories of heavy fuel oils were increased a little, after having decreased gradually during the several preceding weeks.

Production and Runs

United States crude oil production averaged 3,846,450 barrels daily in the week ended June 22, according to the American Petroleum Institute, having risen 30,000 barrels over the previous week's rate and to within about 50,000 barrels of the all-time peak. The output of the wells was 11.2 percent greater than in the corresponding week last year.

Crude runs to stills broke all previous records in averaging 3,690,000 barrels daily in the week of June 22, having expanded 25,000 barrels beyond the former record proportions of 3,665,000 barrels a day, set in the week ended May 18 this year. The runs were nearly 6 percent greater than the daily average of June last year.

Gasoline Situation

In response to heavy runs to stills, gasoline production also rose to the highest level on record, having totaled 12,085,000 barrels in the June 22 week, compared with 11,767,000 barrels the preceding 7 days and the previous high of 11,793,000 barrels in the week ended June 1.

In consequence of the large current production of gasoline at the plants, stocks of that product, although seriously excessive, failed to come down more than a moderate amount. From 97,660,000 barrels at the beginning of the week, the storage was reduced 384,000 barrels to 97,276,000 barrels. The inventory is 16,000,000 barrels larger than that held a year ago, and that huge gain largely represents surplus gasoline, as stocks were larger than necessary at this time last year, while total demand has shown only a small increase this year, with exports down sharply.

Fuel Oil Stocks

An addition of 865,000 barrels to stocks of light fuel oil brought the total on hand up to 32,751,000 barrels as of June 22. However, the accumulation was smaller than increases of other recent weeks, and the inventory was only 6.4 percent above last year's curve, whereas it had climbed nearly 7 percent above in the preceding week.

These latest figures indicated a relaxing of the efforts of refiners to achieve a better relationship between supply and demand for both gasoline and fuel oil, by holding down yields of gasoline and stepping up yields of the burning oils.

Stocks of heavy fuel oils were increased 264,000 barrels in the week of June 22, after having fallen off steadily throughout June. They totaled 104,683,000 barrels at the end of the week, and were in favorable relation to demand, having shown a decrease of 6.7 percent from the level of 112,245,000 barrels a year before.

Crude oil stocks increased 94,000 barrels in the week ended June 15, the Bureau of Mines reported, having totaled 259,800,000 barrels on the mentioned date. That was 5.5 percent less than the inventory held a year previously.

Difficulties Are Embodied In Prevailing Markets

Additional decreases in quotations on lubricants in Mid-Continent and Western Pennsylvania refining districts were the principal changes in petroleum products prices the past week. And crude postings were unchanged, although there were some indications that prices for Pennsylvania grade crude might decline even further, despite having been marked down 25 cents May 22 and 25 cents more June 18.

The recent developments in the European war have wiped out nearly half the export market for United States lubricants and have accentuated the weakness of lubricant prices. The impaired lubricant market, in turn, has circumscribed the demand for Pennsylvania grade crude, with the result that producers have encountered difficulty in disposing of their oil.

The continued weakness of the Pennsylvania grade crude market was evidenced last week when Sinclair Refining Company and Tide Water Associated Oil Company announced that they would reduce their takings of oil of that grade. Effective June 24, Sinclair prorated its pipe line runs of Pennsylvania crude an additional 10 percent, after having made two previous 10 percent cuts. Thus the company now is taking only 70 percent of capacity. Effective July 1, Tide Water ordered takings of Bradford-Allegany district crudes to 85 percent of the base figures stipulated in contracts with producers.

Prices of lubricants began declining around the beginning of this year, after having increased precipitately last fall, and the decline still was under way the past week, as the export outlook was discouraging. Bright stocks were marked down another 1 cent a gallon by some Pennsylvania refiners, and wax also was reduced. Neutral oils, on the other hand, were comparatively firm, and prices were maintained.

In the Mid-Continent, too, some refiners further lowered their quotations on lubricants last week, in meeting the competition of Western Pennsylvania plants.

Gasoline Market

The gasoline market was highly active the past week, and there was no quibbling over the previously established refinery prices; but the activity was to a large extent artificial, as there was a flood of advance buying by jobbers, who were laying in supplies that could still be bought prior to July 1 without paying the added federal tax of ½ cent a gallon. Late in the week much of that buying ahead of the higher tax had subsided, as storage facilities and tank cars for shipment had become unavailable in many instances. The tax is paid by the refiner or compounder, and the extra ½ cent levy would not apply on gasoline disposed of by the refiners prior to July 1.

The artificial demand for gasoline caused by the inauguration of the additional federal tax probably was partly responsible

PRODUCT PRICES

REFINED GASOLINE

	Range Last Week (Cents a gal.)	Late Week	Changes from week Before	
Oklahoma Refineries:				
60 Octane and under	4	4¼	...	...
63-66 Octane	4¼	4¾	...	...
72-74 Octane	4¾	5¼	...	...
Mid-Western Tank Car:				
60 Octane and under	4	4¼	...	...
63-66 Octane	4¾	4¾	...	...
72-74 Octane	4¾	5¼	...	...
New York Harbor:				
70 Octane and under	6	6¼	...	...
72-74 Octane	6	6¾	...	...

NATURAL GASOLINE

Grade 26-70:				
F.O.B. Group 3	1½	1½	...	...
F.O.B. Breckenridge, Texas	1¼	1¼	...	...

KEROSENE

Oklahoma Refineries:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
Mid-Western Tank Car:				
41-43 water white	3⅞	4¼	...	...
42-44 water white	4	4⅝	...	...
New York Harbor	5.4	5½	...	...

RANGE OIL

At Oklahoma Refineries	3⅝	3⅞	...	...
In Mid-Western Market, Group 3 basis	3¾	3⅞	...	...

LIGHT FUEL OILS

Oklahoma Refineries:				
No. 1 straw	3⅜	3⅝	...	...
No. 3	3¼	3⅜	...	...
Mid-Western Tank Car:				
No. 1 straw	3½	3⅝	...	...
No. 3	3⅛	3⅜	...	...
New York Harbor:				
No. 1	5.4	5½	...	...
No. 3	4.7	4¾	...	...

HEAVY FUEL OILS

(Per Barrel)

	Range Last Week (Cents a gal.)	Late Week	Changes from week Before	
Oklahoma Refineries:				
No. 6	55	55	...	...
Mid-Western Tank Car:				
No. 5	75	75	...	...
No. 6	50	55	...	...
New York Harbor:				
No. 5	$1.55	$1.70	...	...
No. 6	1.35	1.35	...	...

BUNKER C FUEL OIL

(Per barrel, ships bunkers)

Gulf Coast	$ .80	$ .95	...	...
New York Harbor	1.35	1.35	...	...

DIESEL OIL

(Per barrel, ships bunkers)

Gulf Coast	$1.50	$1.70	...	...
New York Harbor	1.95	1.95	...	...
Los Angeles Basin, 27 gravity	1.15	1.40	...	...

LUBRICATING OIL

Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	15½	18½	—1	...
Neutral oil, pale, No. 3 color, 150 viscosity at 100°, 0-10 pour test	8½	11¼	—1	...
Western Pennsylvania:				
Bright stock, 145-166 viscosity, at 210°, 25 pour test	16	18	—1	...
Neutral Oil, No. 3 color, 150 viscosity, at 70°, 25 pour test	19	20	...	...

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937:						
August 28	[5]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[5]3,455,000	307,974,000	65,620,000	116,472,000	
1938:						
March 19	3,433,550	3,080,000	306,380,000	[5]93,192,000	122,067,000	
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939:						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
May 27	3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
September 30	3,658,200	3,560,000	233,023,000	71,168,000	38,081,000	115,466,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[2]229,127,000	72,122,000	39,358,000	115,060,000
October 28	3,498,500	3,520,000	230,453,000	72,660,000	39,562,000	114,786,000
November 25	3,818,100	3,510,000	231,811,000	75,595,000	38,527,000	112,106,000
December 30	3,545,000	3,445,000	237,742,000	80,985,000	34,184,000	106,680,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
June 1	3,651,650	3,651,350	261,662,000	100,353,000	29,533,000	104,768,000
June 8	3,816,950	3,600,000	259,706,000	99,471,000	30,609,000	104,666,000
June 15	3,816,200	3,620,000	259,800,000	97,660,000	31,886,000	104,419,000
June 22, 1940	3,846,450	[3]3,690,000	.....	97,276,000	32,751,000	104,683,000
June 22, 1939	3,452,800	[5]3,490,000	[4]274,852,000	81,331,000	30,794,000	112,245,000
Change in past year	+11.2%	+5.7%	—5.5%	+19.6%	+6.4%	—6.7%

[1] All time peak. [2] Peak for 1939. [3] Lowest since April, 1922. [4] Stocks, June 17, 1939. [5] Peak prior to 1939. [6] Lowest for year. [7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California. [8] June, 1939 daily average. [9] Lowest since October, 1922, due to the shutdown of six Mid-Continent States.

for stepping up of refinery runs and gasoline production to new all-time peaks in the week ended June 22 without interruption of withdrawals from storage. Thus the gasoline situation appeared generally satisfactory, in the extraordinary circumstances that prevailed.

For coming weeks, however, the outlook is not reassuring. Demand naturally will be retarded in consequence of the advance buying of the past two weeks, and the full force of the burdensome gasoline stocks will be felt.

The inventories of gasoline are around 15,000,000 barrels larger than necessary, being particularly large on the Gulf Coast and the Atlantic seaboard.

Not only the tax situation but also the tanker situation affected the gasoline market last week. Tanker rates from the Gulf to the North Atlantic continued the decline that got under way before the middle of June, and prices at Atlantic ports were reduced somewhat further last week, in reflection of the reduced transportation charges. The sharp decreases in tanker rates have been attributed to several causes. Particularly responsible has been the reaching of the end of heavy shipments of heating oils for the past season of consumption of that product, the advent of summer commonly bringing a resultant lull in the movement of tankers.

The markets for light fuel oils and kerosene have continued about unchanged, but there has been some further improvement in the market for heavy fuel oil throughout the country. This betterment has reflected increased purchases by the railroads as well as industrial concerns. Continuation of a firm market for heavy fuel oil is indicated by the inventory situation, the supplies being moderate in relation to prevailing demand.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in June	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 22	BARRELS DAILY FOR WEEK ENDED June 29
TEXAS—				
Texas Panhandle	.....	.....	67,100	60,900
North Texas	.....	.....	102,200	93,200
West Central Texas	.....	.....	32,900	30,200
West Texas	.....	.....	238,800	205,800
East Central Texas	.....	.....	82,100	72,200
East Texas Field	.....	.....	397,300	298,200
South Texas	.....	.....	244,200	206,700
Texas Gulf Coast	.....	.....	235,700	211,600
Total Texas	1,344,600	1,355,530*	1,400,300	1,178,800
CALIFORNIA—				
Long Beach	.....	.....	45,000	43,900
Midway-Sunset	.....	.....	43,600	40,200
Kettleman Hills	.....	.....	49,100	45,500
Wilmington	.....	.....	86,200	85,000
Others	.....	.....	382,300	381,000
Total California	593,700	592,000†	606,200	596,600
OKLAHOMA—				
Oklahoma City	.....	.....	102,300	102,150
Seminole Area	.....	.....	105,650	105,100
Others	.....	.....	211,375	209,525
Total Oklahoma	408,600	408,100	419,325	416,775
ILLINOIS—				
Salem	.....	.....	243,300	238,300
Centralia	.....	.....	101,150	110,900
Louden	.....	.....	72,800	75,200
Other New Pools	.....	.....	78,350	77,700
Old Pools	.....	.....	10,350	9,750
Total Illinois	395,600	.....	505,900	511,850

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand in June	State Allowable in June	BARRELS DAILY FOR WEEK ENDED June 22	BARRELS DAILY FOR WEEK ENDED June 29
LOUISIANA—				
North Louisiana	.....	.....	69,200	69,100
South Louisiana	.....	.....	223,100	223,000
Total Louisiana	274,700	278,566	292,300	292,100
KANSAS	159,000	159,000	178,350	183,100
NEW MEXICO	106,700	106,790	107,500	106,700
EASTERN STATES—				
Pennsylvania Grade	49,400	.....	74,750	72,650
Others, Eastern	49,000	.....	19,500	20,100
Total Eastern States	98,400	.....	94,250	92,750
MOUNTAIN STATES—				
Wyoming	73,000	.....	69,500	73,100
Montana	18,300	.....	17,850	17,850
Colorado	4,000	.....	3,400	3,700
Total Mountain States	95,300	.....	90,750	94,650
MICHIGAN	62,000	56,000	57,100	56,300
ARKANSAS	66,700	70,515	71,900	72,300
INDIANA	8,000	.....	12,500	11,900
MISSISSIPPI	7,000	.....	11,600	9,650
NEBRASKA	.....	.....	100	150
‡Total 8 Prorated States	3,016,000	3,006,411	3,132,975	2,902,675
Total United States	3,620,300	.....	3,848,075	3,623,625

* Net daily average, considering general shutdown June 1, and 14 shutdown days in East Texas field.
† Recommendation of Central Committee of California Oil Producers.
‡ Texas, California, Oklahoma, Louisiana, Kansas, Arkansas, Michigan, New Mexico.

CRUDE OIL PRICE SCHEDULES

MID-CONTINENT GRAVITY SCALE PRICES—Posted October 11-13, 1938

(Some fields of Mid-Continent have flat price postings, and are shown separately)

Gravity	[7]Okla.-Kans.	[10] North La.-Ark.	[9] Schuler, Ark. 9-13-39	North & W. Central Tex.	East Central Tex.	Gray Co. Tex.	Carson, Hutchinson Co. Tex.	[1]Tomball Tex. Type	West Tex.-New Mex.	[2]Gulf Coast (Tex.-La.) 10-2-39	[3]Some La. Gulf Areas 10-2-39	Jennings, La.	[4]Anahuac, Tex. Type 10-2-39	[5]Refugio, Tex. Type 10-2-39	[6]Mirando, Tex. Type 10-2-39	[8]Salt Creek, Wyo. (except Tensleep)
19–19.9	.....	.....	.....	.....	.....	.....	.....	.....	*$0.53	*$0.86	*$0.86	.....	*$0.81	*$0.91	*$0.86	.....
20–20.9	$0.60	.....	.....	.....	.....	.....	.....	.....	.55	.88	.88	.....	.83	.93	.88	$0.70
21–21.9	.63	.....	.....	.....	.....	.....	.....	.....	.57	.90	.90	.....	.85	.95	.90	.72
22–22.9	.66	.....	.....	.....	.....	.....	.....	*$0.95	.59	.92	.92	.....	.87	.97	.92	.74
23–23.9	.69	.....	.....	.....	*$0.78	.....	.....	.97	.61	.94	.94	.....	.89	.99	.94	.76
24–24.9	.72	*$0.73	*$0.63	*$0.71	.80	.....	.....	.99	.63	.96	.96	.....	.91	1.01	.96	.78
25–25.9	.75	75	.65	.73	.82	.....	.....	1.01	.65	.98	.98	.....	.93	1.03	.98	.80
26–26.9	.78	.77	.67	.75	.84	.....	.....	1.03	.67	1.00	1.00	.....	.95	1.05	1.00	.82
27–27.9	.81	.79	.69	.77	.86	.....	.....	1.05	.69	1.02	1.02	.....	.97	1.07	1.02	.84
28–28.9	.84	.81	.71	.79	.88	*$0.72	*$0.67	1.07	.71	1.04	1.04	.....	.99	1.09	1.04	.86
29–29.9	.87	.83	.73	.81	.90	.74	.69	1.09	.73	1.06	1.06	.....	1.01	1.11	1.06	.88
30–30.9	.90	.85	.75	.83	.92	.76	.71	1.11	.75	1.08	1.08	.....	1.03	1.13	1.08	.90
31–31.9	.92	.87	.77	.85	.94	.78	.73	1.13	.77	1.10	1.10	*$0.87	1.05	1.15	1.10	.92
32–32.9	.94	.89	.79	.87	.96	.80	.75	1.15	.79	1.12	1.12	.89	1.07	1.17	1.12	.94
33–33.9	.96	.91	.81	.89	.98	.82	.77	1.17	.81	1.14	1.14	.91	1.09	1.19	1.14	.96
34–34.9	.98	.93	.83	.91	1.00	.84	.79	1.19	.83	1.16	†1.16	.93	1.11	1.21	1.16	.98
35–35.9	1.00	.95	.85	.93	1.02	.86	.81	1.21	.85	1.18	.....	.95	1.13	1.23	1.18	1.00
36–36.9	1.02	.97	.87	.95	1.04	.88	.83	1.23	.87	1.20	.....	.97	1.15	1.25	1.20	1.02
37–37.9	1.04	.99	.89	.97	1.06	.90	.85	1.25	.89	1.22	.....	.99	1.17	1.27	1.22	1.04
38–38.9	1.06	1.01	.91	.99	1.08	.92	.87	1.27	.91	1.24	.....	1.01	1.19	1.29	1.24	1.06
39–39.9	1.08	1.03	.93	1.01	1.10	.94	.89	1.29	.93	1.26	.....	1.03	1.21	1.31	1.26	1.08
40+	1.10	1.05	.95	1.03	1.12	.96	.91	1.31	.95	1.28	.....	1.05	1.23	1.33	1.28	1.10

* Minimum price and applies also to purchases of lower gravity.

† Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep) and Satsuma.

[2] Includes Amelia, Barbers Hill, Big Creek, Blue Ridge, Clear Lake, Cotton Lake, Esperson, Fannett, Goose Creek, Hankamer, Lovells Lake, Lochridge, Moore, Mykawa, Nome, Orange, South Liberty, Spindle Top, Sugar Land, Thompsons, Webster, and West Beaumont.

[3] Includes Berwick Bay, Bay St. Elaine, Caillou Island, Chacahoula, Dog Lake, Edgerly, Four Isle, Gillis, Grand Bay, Hackberry, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville, Port Barre, Starks, Timballer Bay, Quarantine Bay, and Vinton fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Orange, Pierce Junction, Batson, Caplen, Humble, North Dayton, Saratoga, Sour Lake, South Esperson, Spindle Top, West Orange, Thompson (deep), and Raccoon Bend (shallow) fields.

[5] Includes Saxet, E. White Point, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton.

[9] Also Buckner, Village, Magnolia.

[10] Add 10 cents for Bunkie and Eola field prices.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.73	10–12 38
Louisiana:		
Garden Island	1.24	10–12–38
Gibson	1 04	10–11–38
Lafitte	1.04	10–12–38
Texas:		
Cayuga	78	10– 2–39
East Texas	1.10	10–12–38
Talco	.65	10– 2–39
Livingston, Cleveland	1.10	10–12–38
Van	.93	10–12–38
Pettus	1.29	10–12–38
Pecos County	78	10–12–38
Pecos Shallow	.65	10–12–38
Luling	.87	10 12–38
Lytton Springs	.99	10–12–38
Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski	96	10–11–38
Flour Bluff-Jim Wells Co.	1 23	10–11–38
Guerra	1.06½	5– 8–39
Seabreeze, Willow Slough, La Belle, Hardin, S. China	1 10	9–14–39
Clay Creek	85	10–13–38
Conroe	1 27	10–11–38
Long Lake	1.08	10–19 38

Middle West Prices

Lima, Ohio	$0.90	10–13–38
Illinois, old fields	95	6 8–39
Illinois Basin	1 05	6 8–39
Lake Centralia-Salem, Illinois	1 05	10–21–39
Princeton, Indiana	.95	6– 8–39
Sw. Ind.-Se. Ill.: N. Griffin, S. Griffin, Phillipstown, New Harmony, and Iron	1.00	5–25–40
Western Kentucky	90	6– 8–39
Birk City, Western Kentucky	.90	6– 8–39
Kentucky River, Eastern Ky.	1.10	6– 9–39
Big Sandy River, Eastern Ky.	1 02	6– 9–39

Michigan Prices

	Flat Price	Date Posted
Central (Basin):		
Porter, Greendale, Crystal, Wise, Midland	$1.02	10– 9–39
Buckeye, Edenville Bentley, Beaverton	1.00	10– 9–39
Freeman, Sherman, Clare	.97	10– 9–39
Arenac, Ogemaw, W. Branch	.87	11– 9–39
Southwest (Shallow):		
Allegan, Kent Counties	1.08	4 27–40
Van Buren Co., Bloomingdale	1.08	5– 1–40
Zeeland	.85	10– 9–39
Bangor	.83	10– 9–39

Rocky Mountain States Prices

Colorado:		
Canon City, Ft Collins, Wellington Moffat and Florence	.90	10–11–38
Iles, Light	.98	10–11 38
Iles, Heavy	.92	10–11–38
Montana:		
Cat Creek	1.10	10–11–38
Cut Bank	1.00	1– 1–40
Sunburst	.80	1– 1–40
New Mexico:		
Artesia	.77	10–11–38
Hogback	1.00	10–11–38
Wyoming		
Big Muddy	98	10–11–38
Byron	55	10–11–38
Dry Creek	92	10–11–38
Elk Basin	90	10–11–38
Frannie, Light	55	10–11–38
Frannie, Heavy	42	10–11–38
Garland	50	10–11–38
Grass Creek, Light	90	10–11–38
Grass Creek, Heavy	40	10–11–38
Hamilton Dome	35	10–11–38
Lance Creek	77	10–11–38
Mill Creek	72	10–11–38
Oregon Basin	40	4–20–40
Osage	1.30	10–11–38
Poison Spider	59	10–11–38
Rock Creek	1.00	10–11–38
Tensleep	646	10–11–38

Pennsylvania Prices

	Flat Price	Date Posted
Bradford-Allegany	$2 25	6–18–40
National Transit Lines	2.25	6–18–40
Sw. Pa. Pipe Line	1.90	6–18–40
Eureka Pipe Line	1.84	6–18–40
Corning Grade, Ohio	1.12	11– 4–39

Major Price Changes

	Penna. (Nat. Tr.)	Mid-Cont (36 Gr.)	Calif (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
Aug. 11, 1933	Up 10	.....	.....
Aug. 24, 1933	.....	Up 10	.....
Aug. 30, 1933	Up 15	.....	.....
Sept. 6. 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Mar. 7, 1936	.....	.....	Up *18
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
March 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
March 6, 1939	Up 12	.....	.....
Oct. 6, 1939	Up 25	.....	.....
Nov. 1, 1939	Up 15	.....	.....
Dec. 1, 1939	Up 10	.....	.....
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....

* Signal Hill 26 gravity.

Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interests.
Texas—2¾ cents or 2¾ percent, whichever is higher.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 percent of gross market value.
Montana—Two percent of gross value at well and ⅜ of 1c per barrel.
New Mexico—Severance tax of 2 percent on oil and gas.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Production Drops 250,000 Barrels; Illinois Up

United States crude oil production dropped 224,450 barrels last week as revised proration allowables in Texas went into effect. Other states were generally the same, with minor changes compensating each other, as Texas accounted for 221,500 barrels of the drop in United States production.

Revised allowables and a general shutdown on June 23 cut Texas production to 1,178,800 barrels a day. East Texas felt the drop most sharply as crude oil production in that field dropped an average of 99,100 barrels a day. Drops in other sections were relative to their former production because of a shutdown on June 23. Texas production last week was 165,800 barrels under the United States Bureau of Mines estimate of daily demand.

Illinois established an all-time production record for the fourth consecutive week. Further rises in the Centralia pool production brought the Illinois daily figure to 511,850 barrels, or 5950 barrels a day over production for the preceding week. This amount was 116,250 barrels in excess of the bureau's daily demand estimate for the state.

California production was down 9600 barrels to average 596,600 barrels. This amount was 2900 barrels in excess of the demand estimate.

Oklahoma showed little change as production dropped 2550 barrels a day for a daily average figure of 416,775 barrels, still around 8000 barrels over the bureau figure.

Other changes throughout the United States were of a minor nature and represented local fluctuations having little or no bearing on the production picture as a whole.

Federal Gasoline and Oil Taxes Continue at High Level

Federal gasoline-tax collections in May reached the highest figure recorded for any month since January, totaling $18,958,336, against $15,184,770 in April, and $16,376,983 in May, 1939, it was reported June 20 by the United States Internal Revenue Bureau.

Lubricating oil tax collections were at the highest level since last November, at $2,853,244, compared with $2,026,048 in the preceding month and $2,551,012 in the corresponding month last year, and collections from transportation of oil by pipe line also showed improvement, totaling $1,029,040, against $806,633 in April and $904,958 in May of last year.

For the first 11 months of the fiscal year, which ends June 30, collections from the three levies showed an increase of more than $16,600,000 over the corresponding period a year ago, the bureau announced.

Receipts from the gasoline tax totaled $205,100,766, an increase of $15,878,107 over last year's $189,222,659 while lubricating oil taxes of $28,307,995 showed an increase of $305,351 over last year's $28,002,644, and transportation taxes of $10,469,337 were $450,407 ahead of last year's $10,018,930.

Michigan Production Slides To 14-Month Low Point

Preliminary reports on Michigan crude oil production for May, announced by the Oil & Gas Association of Michigan, set the total at 1,757,392 barrels for a 14-month low, and 71,820 barrels below April. Average daily production for May of 56,690 barrels represented a daily average decline of 4264 barrels from the previous month.

The Wise pool, Isabella County, unprorated, produced 101,347 barrels, compared to 84,389 in April, and was the only active field to show a gain. The Grand Rapids pool, leading crude source in the state, slipped from 456,277 to 408,987 barrels. Clare-Temple, second largest flush district, declined from 385,643 to 367,874 barrels.

Confiscated East Texas Crude To Be Sold

The 126th District Court at Austin has entered an order providing for the sale of 56,606 barrels of confiscated East Texas crude, involved in a suit in which P. H. Pewitt et al were defendants. At the same time the court held that another 36,000 barrels of crude involved in this suit had been produced legally and that the railroad commission must issue tenders on it.

NPA Semi-Annual Meeting

The National Petroleum Association last week scheduled its thirty-eighth semi-annual meeting for April 24-25, 1941, at Cleveland.

CALIFORNIA CRUDE OIL PRICES

Posted effective February 1, 1940. All gravities above those quoted take highest price offered in that field.

Gravity	Wilmington	Signal Hill (Long Beach), El Segundo	Seal Beach	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea, Canon	Athens-Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier, East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, McKittrick, Kern River, Round Mt., Kern Front	Greeley, Canal	Coles Levee, Richfield Western	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Wheeler Ridge	Kettleman Hills
14-14.9	$0.60	$0.65	$0.64	$0.63	$0.64	$0.65	$0.61	....	....	$0.65	$0.61	$0.61	$0.62	$0.63	....	$0.60	....	....	....	$0.60	$0.60	$0.60	....	....
15-15.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
16-16.9	.60	.65	.64	.63	.64	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
17-17.9	.62	.65	.64	.63	.68	.65	.61	....	....	.65	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
18-18.9	.64	.65	.64	.63	.71	.65	.65	....	....	.68	.61	.61	.62	.63	....	.60	....	....	....	.60	.60	.60	....	....
19-19.9	.69	.69	.64	.67	.75	.70	.69	....	....	.72	.61	.65	.62	.63	....	.60	....	....	$0.60	.64	.64	.61	$0.60	....
20-20.9	.73	.73	.64	.72	.79	.76	.74	....	....	.75	.65	.69	.62	.67	....	....	....	....	.60	.69	.69	.62	.60	....
21-21.9	.78	.78	.64	.76	.82	.81	.78	....	....	.79	.69	.73	.62	.72	$0.63	....	....	....	.64	.74	.74	.66	.60	....
22-22.9	.82	.82	.69	.81	.86	.86	.82	....	....	.82	.73	.77	.66	.76	.63	....	....	....	.68	.79	.78	.70	.63	....
23-23.9	.86	.86	.75	.85	.89	.92	.86	$0.71	....	.86	.78	.82	.71	.81	.67	....	....	....	.71	.84	.82	.74	.67	....
24-24.9	.90	.90	.80	.90	.93	.97	.90	.77	....	.89	.82	.86	.75	.85	.72	....	....	....	.75	.89	.86	.78	.71	....
25-25.9	.95	.95	.86	.94	.96	1.02	.95	.82	....	.93	.86	.90	.80	.89	.77	....	....	....	.79	.94	.90	.82	.75	....
26-26.9	.99	.99	.91	.99	1.00	1.08	.99	.88	....	.96	.90	.94	.84	.94	.82	....	....	....	.83	.99	.95	....	....	....
27-27.9	1.03	1.03	.97	1.03	1.04	F.O.B.	1.03	.94	....	1.00	.94	.98	.89	.98	.87	....	$0.83	$0.92	.87	1.04	.99	....	....	....
28-28.9	1.07	1.07	1.02	1.07	1.07	Pipe Line	1.07	.99	....	1.03	.98	....	.93	1.02	.91	....	.86	.96	.91	1.09	1.03	....	....	....
29-29.9	1.10	1.10	1.07	1.11	1.10	....	1.10	1.04	....	1.06	1.02	....	.98	1.06	.96	....	.90	.99	.95	1.14	1.07	....	....	....
30-30.9	1.14	1.14	1.12	1.15	1.14	....	1.14	1.09	F.O.B.	1.09	....	....	1.02	1.10	1.01	....	.94	1.02	.99	1.19	1.11	....	....	....
31-31.9	....	....	....	....	1.17	....	1.17	1.14	Ship	....	....	....	1.07	1.14	1.05	....	.98	1.06	1.02	1.24	....	....	....	....
32-32.9	....	....	....	....	1.20	....	1.20	1.19	....	....	....	....	1.11	1.18	1.09	....	1.02	1.09	1.06	1.29	....	....	....	....
33-33.9	....	....	....	....	....	....	....	1.24	$1.21	....	....	....	1.15	1.22	1.14	....	1.06	1.13	1.10	1.34	....	....	....	$1.12
34-34.9	....	....	....	....	....	....	....	1.29	1.25	....	....	....	1.20	1.26	1.19	....	1.10	1.16	1.14	....	....	....	....	1.17
35-35.9	....	....	....	....	....	....	....	1.34	1.29	....	....	....	1.24	....	1.23	....	1.14	1.20	....	....	....	....	....	1.21
36-36.9	....	....	....	....	....	....	....	1.39	1.33	....	....	....	1.28	....	1.27	....	1.18	1.23	....	....	....	....	....	1.25
37-37.9	....	....	....	....	....	....	....	1.44	1.37	....	....	....	1.33	....	1.31	....	1.22	1.26	....	....	....	....	....	1.29
38-38.9	....	....	....	....	....	....	....	1.49	....	....	....	....	1.37	....	1.36	....	1.25	1.30	....	....	....	....	....	1.33
39-39.9	....	....	....	....	....	....	....	1.54	....	....	....	....	1.42	....	....	....	1.29	1.34	....	....	....	....	....	1.38
40-40.9	....	....	....	....	....	....	....	1.59	....	....	....	....	1.46	....	....	....	1.33	1.37	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	....	....	1.50	....	....	....	1.37	1.40	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	....	....	1.54	....	....	....	1.41	1.44	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	....	....	1.59	....	....	....	1.45	1.47	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	....	....	1.63	....	....	....	1.49	1.51	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	....	....	1.67	....	....	....	1.53	1.54	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	....	....	1.71	....	....	....	1.57	1.57	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.61	....	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1.64	....	....	....	....	....	....	....

Oklahoma

Hunton Lime Added to Wilcox in Coyle Pool

Helmerich & Payne and Blackwell Oil & Gas Company opened Hunton-lime production in the Coyle pool, Payne County, when Collins 3, CWL NE NW 13-17n-1e, flowed 77 barrels the first 28 minutes, and increased to 175 barrels an hour through tubing. Pay was perforated with 36 shots at 4605-20 feet. The test is in the south end of the pool, and Hunton production is believed to extend beyond the Wilcox sand in this direction. An edge well showed poorly to the south and east. Collins 3 had been deepened from 4885 feet in the Wilcox. It was shut in for tankage.

O. E. Dempsey, O. B. Hausam and Joe B. Wright opened a new Prue sand pool between the Drumright and Olive pools, Creek County, when Marrs 1, NE NW SE 29-18n-8e, swabbed and bailed 53 barrels of 39.5-gravity oil in 6 hours. The well is estimated better than 250 barrels daily. Prue sand was logged at 2445-56 feet, and operators were cleaning out before squibbing the pay.

An Oswego-lime pool was opened 2 miles southwest of East Hominy pool in Osage County. E. O. Platter's Osage 1, SEc NE 29-22n-9e, pumped and flowed 35 barrels of 40-gravity oil in 24 hours while testing at 1795-1811 feet. After acid, it flowed 160 barrels in 24 hours.

Between Hominy and Cleveland areas, another Oswego revival play proved interesting. Moore Oil Company's test in SWc NW 35-22n-8e, pumped 50 barrels of 40-gravity crude, which after acid increased to 125 barrels daily. Saturated Oswego lime was penetrated at 2002-12 feet. Moore Oil Company and Skelly Oil Company have a 480-acre block to the south and in the north edge of the Osage City field.

In Logan County, Eason Oil Company and O. A. Walters' Wells 1, NE NW NE 15-16n-2w, immediately east of Guthrie, topped Wilcox sand at 5819 feet, and in coring from 5824 feet to 5837 feet recovered 8 feet of saturated sand. Attempts were made to lower an electric log survey, to bottom, but failed due to mechanical difficulties. Casing was ordered run, and plugs were to be drilled over the week-end. Offset acreage is held by The Texas Company to the northeast, Indian Territory Illuminating Oil Company to the north and south and Gulf Oil Corporation to the northwest. Eason Oil Company has a block to the east.

A deep Dewey County wildcat in Western Oklahoma probably will be junked. Magnolia Petroleum Company's Fiekes 1, C SW SW 31-18n-14w, northwest of Oakwoods, stuck drill pipe at 8400 feet. Total depth is 9475 feet, in Mississippi lime.

Thompson Brothers' Truesdale 1, SEc NW 31-8n-5e, northeast of production in the St. Louis pool, Pottawatomie County, tested 2 barrels of oil and 2 barrels of water per hour in Wilcox sand at 4420-30 feet. It will be deepened to the second Wilcox sand. A show of free oil occurred when drilling in with standard tools at 4350 feet.

A mile south of Yale townsite, Payne County, W. O. Allen abandoned Freeman 1, SWc SE 24-19n-5e, at 3630 feet in the Wilcox sand. A log disclosed Layton at 2040 feet, Checkerboard at 2380 feet, Cleveland at 2540 feet, Oswego lime at 2790 feet, Prue sand at 2890 feet, Skinner sand at 3029 feet, Mississippi lime at 3378 feet, Woodford shale at 3480 feet, Misener sand at 3506 feet, Viola lime at 3510 feet, and first Wilcox sand at 3580 feet. South of Cushing, Link Oil Company started Krolop 1, SWc SE 14-17n-5e. Four miles west of Stillwater, W. H. Elson, Conhaim and Portable Drilling Company were moving in materials for a Wilcox-sand test at Murphy 1, SEc SW 20-19n-2e. The structure has been checked by seismograph. Summit Drilling Company et al's Arnold 1, NW NE NW 8-19n-2e, wildcat northwest of Stillwater, was rotating below 4500 feet.

Burke Extended

Comail Oil Company and Haskins extended Burke pool production across the county line from Lincoln into Payne at Meyer 1-A, NW SE SE 17-17n-6e, completed for 24 barrels per day with 750,000 cubic feet of gas. Prue sand was topped at 2874 feet and drilled to 2905 feet.

Seran et al completed one of the largest producers in the Dill pool, Okfuskee County, at Fee 4, NWc 2-11n-8e, finaled for a flowing potential of 3122 barrels in 24 hours through casing from Cromwell sand at 3512-48 feet. John Droppleman et al's Keyes 1, NEc SE 4-11n-8e, on the Okfuskee-Seminole County line, topped Cromwell sand at 3632 feet and cored at 3634-56 feet to recover 16 feet of dry white sand. Location is 1 mile west of Dill pool.

In Noble County, Midco Oil Corporation completed an extension test at Harbison 1-A, NW SE SW 22-23n-2w, flowing an estimated 2052 barrels of oil in 24 hours. Pay is Wilcox sand at 4331-41 feet.

Failures were recorded in Garvin and Osage counties. Troup, Moore and Dennis et al's Bowie 1, NW NE SE 3-4n-3e, 3 miles south of Byars pool and near the town of Stratford, Garvin County, was plugged at 3296 feet. Tide Water Associated Oil Company and Olson Drilling Company's Osage 1, NEc 26-26n-4e, southwest of Kaw pool, Osage County, was abandoned at 3320 feet.

Wildcats Start

Vierson Oil & Gas Company staked Replogle 1, NW SW NE 24-14n-10e, near Edna pool in Creek County. In Okfuskee County, J. R. Higgins & Co. moved in materials at Jackson 1, C NW NW 25-11n-8e, northeast of Cromwell pool. In the same county, J. O. Hayes Drilling Company et al's McKernan 1, CE½ SE NW 25-12n-8e, north of Dill pool, was a location. W. B. Davis et al's Thlocco 1, NW SW NW 30-7n-7e, southeast of Little River pool in Seminole County, has spudded.

J. E. Cheek staked Hobbs 1, SEc NW 25-6n-17w, south of production in the Komalty field of Kiowa County. Loual Drilling Company was drilling below 2015 feet at Jackson 1, C SW NW 24-9n-9e, in Hughes County.

Alma Oil Company's Gosting 1, SEc 14-27n-2e, four miles west of Mervine pool and south of Newkirk, Kay County, was abandoned at 4062 feet in Abbuckle lime without shows.

Kansas

Russell County Wildcat Flows From Lime Pay

Two miles southeast of Bunker Hill pool in Russell County, Jones Brothers opened a new Lansing-Kansas City lime pool at Mahoney 1, CSL SW SW 8-14-12w, flowing 120 barrels in 24 hours after averaging 5 barrels an hour. Hole is bottomed at 2980 feet in the pay, with casing ordered to be run. At 2357-2408 feet, gas was estimated in excess of 2,000,000 cubic feet.

Haynes & Anschutz have a conglomerate strike in Russell County. Driscoll 1, CN½ SE SW 30-15-11w, 3 miles west of Davidson pool and 2½ miles northeast of Feltes pool, filled 500 feet with oil when plugs were drilled to 3316 feet in the pay. Tubing and rods were run for a production test.

A Barton County wildcat showed good possibilities of a pool opener. Finston & Company et al's Pichner 1, CEL NE SW 24-16-11w, 3 miles east of Prusa pool, topped Arbuckle lime at 3376 feet and cored good saturation at 3392-99 feet. Seven-inch casing was cemented at 3386 feet, prior to drilling in. West of Krier pool ¾ mile, C. R. Piggott, Johnson et al's Oeser 1, CN½ NE SW 30-16-11w, filled 1500 feet with oil after penetrating two pay sections in the Lansing-Kansas City lime. First pay was encountered at 3048-50 feet and the second at 3060-65 feet. Operators will drill to the Arbuckle lime before testing upper shows.

Following an 18-quart shot, Derby Oil Company's State 1 "A," NW NE SE 36-19-12w, ⅜ mile northeast of Wolf pool, Barton County, and in the

Arkansas City River bed, flowed 9 barrels hourly for 3 hours with 2 percent water. Pay is Arbuckle lime at 3366 feet.

Sinclair-Prairie Oil Company's Binning 1, CS½ SE SW 26-32-13w, 3½ miles north of Medicine Lodge oil and gas pool, topped Arbuckle lime at 4975 feet and was rotating below 5075 feet with nothing showing. This wildcat is also southwest of the Whelan pool in Barber County.

New Horizons

Stanolind Oil & Gas Company opened initial production in Pennsylvanian sand at Rosener 9, CN½ NE SW 9-15-13w, Trapp pool, Russell County, and completed for potential of 549 barrels daily through casing perforations. Pay section, logged at 3311-16 feet, was drilled to 3334 feet.

Initial Simpson-sand production was opened in the Haverhill pool, Butler County, at Cromwell & Lewis' Clark 1, NW NEc 3-28-5e, completed for a pumping potential of 38 barrels of oil in 24 hours. Pay was topped at 3078 feet, and hole bottomed at 3086 feet. Operators staked Roetz 1, SWc 35-27-5e, a northeast diagonal offset to the Clark producer. This old area formerly produced solely from Burbank sand.

Two wildcats were rigging in Barton County: The Texas Company's Hammeke 1, NE NW SE 36-19-12w, north of Ellinwood West pool, and H. L. Berkey et al's Hitschmann 1, CE½ NE NW 1-17-12w, 1½ miles southwest of Krier pool. The latter is a Texas Company farmout, and tools are operated by Herndon Drilling Company.

Three miles west of gas production in the Cunningham pool, Pratt County, Cities Service Oil Company staked Lehrling 1, C SW 19-27-11w.

Beardmore et al's Talsky 2, CEL NE NE 8-16-11w, on the north edge of Stoltenberg pool, Ellsworth County, topped Arbuckle lime at 3244 feet and drilled in 2 feet for a show of oil. It is a south offset to a Magnolia Petroleum Company dry hole, and a west offset to a producer by Prunty Production Company. It is ¼ mile north of Talsky 1, an Arbuckle-lime producer.

Lauck & Moncrief staked a north offset to the Ehler pool discovery at Ehler 2, CW½ NW 35-16-10w, Ellsworth County. Magnolia Petroleum Company started Haska 1, CWL SW SW 5-16-10w, an east offset to the Haska strike a mile west of the Stoltenberg pool.

Palmer Oil Company's Stratman 1, CE½ NE SW 15-17-10w, a mile northeast of Stoltenberg pool, had nothing showing at 3365 feet in the Arbuckle lime. North of this test, Finston et al abandoned Siemsen 1, CW½ NW SE 3-17-10w, at 3390 feet in Arbuckle lime, topped at 3375 feet.

Cowley Wildcat Has Gas

In Cowley County, W. M. McKnab et al's Lemert 1, CWL NW SE 11-34-4e, 2½ miles east of Arkansas City gas pool, gauged 3,000,000 cubic feet of gas at 3305 feet in Mississippi lime, but will deepen to Arbuckle. Hawkeye Oil Company's Moon 2, NE SW NW 21-32-5e, a northeast offset to a 219-barrel producer in the Frog Hollow (Bartlesville sand) pool, flowed 30 barrels of oil in 15 minutes. Bartlesville pay was topped at 3086 feet, and oil came over the casing top when pay was penetrated only 3 feet. A light shot is planned before further testing. Potential is estimated at 3000 barrels or maximum for the state.

Gulf Oil Corporation and Gled Oil Company officially completed Sanders 1, NE SW SE 30-13-16w, 2½ miles east and slightly north of Toulon pool, Ellis County, for 312 barrels of oil and 144 barrels of water in 24 hours. It has been designated the Sanders pool. Arbuckle lime, topped at 3450 feet and drilled to 3458 feet, was treated with 2000 gallons.

Pryor & Lockhart completed Stratmann 2, CN½ NE NE 2-17-10w, for the second producer in the Stratmann pool, Ellsworth County, establishing a potential of 32,813 barrels daily by draw-down method. Arbuckle lime was logged at 3272-86 feet and acidized with 1000 gallons.

United Production Company extended gas production in the Hugoton field, Grant County, at Stuart 1, NW NWc SE 27-29-35w, gauging 5,000,000 cubic feet. Winfield pay, topped at 2514 feet and drilled to 2737 feet, was acidized with 8000 gallons.

Skelly Oil Company completed two large gassers in the Cunningham pool of Pratt County. South Maxedon 3, SE NE SW SE 25-27-11w, gauged 74,200,000 cubic feet of gas after acidizing Viola lime at 3998-4018 feet with 1000 gallons. West Maxedon 2, C NW 25-27-11w, showed 74,250,000 cubic feet after acid from Viola lime, topped at 4035 feet and penetrated to 4055 feet.

In Kearny County, Western Kansas, Stanolind Oil & Gas Company's Judd 1, C SE SE 15-21-38w, was fishing for a twist-off at 4060 feet.

Wildcat Activity

Aylward Producing Company staked Richards 1, CN½ NW SW 31-10-18w, northwest of Burnett pool, Rooks County. South of abandoned Webster pool, Mitchell Drilling Company's Veverka 1, CS½ SE SE 21-8-19w, had a hole full of water at 3225-30 feet in Lansing-Kansas City lime, and will deepen.

Republic Natural Gas Company and Bradley Brothers' Bean 1, CE½ NE SW 23-19-6w, 3½ miles north of North Bornholdt pool in Rice County, was rigging up rotary tools. Progressive Oil Company has surface hole at Charez 1, CWL SW NW 26-20-2w, 4 miles south of Ritz-Canton pool, McPherson County. Stanolind Oil & Gas Company staked Ahnert 1, CW½ SE NE 10-22-12w, south of South Sittner pool, Stafford County. In the same county, operators were moving in tools at Charles "A" 1, CN½ NE SE 15-24-12w, between Zenith and St. John pools.

Kansas Gas Hearing

The Kansas Corporation Commission has set hearing on July 1 on petition of the Drillers Gas Company for increased allowables for the Cunningham gas field of Pratt and Kingman counties. The hearing will be at Topeka.

Forest City Basin

Two More Starts in Nebraska; State Bonus To Be Claimed

Two new locations were staked in the Falls City area, Richardson County, Nebraska. North and east of the Boice discovery well, Pawnee Royalty Company staked Ventner 1, C NE SE 8-1n-16e for a Hunton lime test. The company also staked a west offset to the Bucholz producer, Reins 1, C NE SE 18-1n-16e.

In Northeastern Kansas, E. M. Mosbacker et al's McLaughlin 1, SW NW NW 4-10s-20e, was completed for 8 to 10 million cubic feet of gas. Bartlesville sand was topped at 1426 feet and drilled to 1915 feet. Casing was perforated at 1430-1455 feet and plug set at 1550 feet. McLaughlin & Young's McLeod 1, C NW SW 4-10-20e, has been designated as the Oskaloosa pool in Jefferson County. In 24 hours it pumped 38 barrels of oil and 3 barrels of water. Mississippi lime was topped at 1469 feet and drilled to 1594 feet. A perforated liner was run for 140 feet. Same operators moved in a machine at Fee 2, SW NE SW NW 4-10s-20e, across the line in Leavenworth County.

Two wildcats were drilling in Douglas County, Kansas. Kerlyn Oil Company's Whedon 1, C NE NE 20-13-20e, was below 175 feet and S. W. Forrester et al's Altenbernd 1, CSL NW 35-12-20e, was drilling around 565 feet.

The largest producer in the basin was shut in after flowing 502 barrels of oil in 19½ hours through tubing. Harry Harper's Seibbernsen 1, SE NW NW 20-1n-16e, logged Hunton lime pay at 2214-36 feet and acidized with 3900 gallons. Forced offsets will be required of Skelly Oil Company to the east and Pawnee Royalty Company on the south.

Pawnee Royalty Company's Bucholz 1, C NW SW 17-1n-16e, completed 30 days of its 60-day test in order to collect the state bonus of $15,000 for the first commercial producer in Nebraska. It has been choked back to 55 barrels of oil daily. The discovery well, Boice 1, CSL N½ NE NE 18-1n-16e, discovery well, was making only a small amount of oil with considerable water and may be abandoned.

A show of oil was reported at Uhri Oil Corporation's Ogle 1-A, NW SE SE 9-1n-14e, 10 miles west of Falls City, Richardson County. The show was noted around 2250 feet while coring in upper Hunton lime. A wood plug failed to hold prior to drilling in and casing was pulled to cement a plug in 5½-inch pipe which was run to 2259 feet.

In Nemaha County, Kansas, Jerry Ladd and George Vincent have taken over Hibbard & Bumpass' test in SE NW 12-4s-14e, located 8 miles south and 4 miles west of Fairview.

H. A. Black was rigging up a machine at Schemp 1, SWc 21-62n-10w, in Knox County, Missouri. Ray Dorris abandoned location for Jones 1, SE NE NW NW 16-58n-17w, in Macon County.

Illinois

Hamilton County Wildcat Flows From Lime Formation

Another new oil field was in sight for Illinois as the week ended. In Hamilton County, near McLeansboro, Kingwood Oil Co., most extensive wildcatter in the basin, was completing F. M. Morris 1, SE NE 34-6s-6e, in a lime formation. After casing perforations at 3154-62 feet, the hole filled 1000 feet with oil in two hours and then began flowing. It was immediately shut in and had not been gauged. Previously, casing was perforated at 3223-31, but the well made only two barrels of fluid an hour, most of which was water. It was then plugged back 60 feet. At an elevation of 415 feet, the test topped the Glen Dean at 2460 feet, Cypress at 2742 feet, and St. Genevieve at 3085 feet. Only other field in the county, the Dale pool, productive in the Cypress, was opened by the company a few months ago.

A Washington County discovery, announced last week, Gulf Refining Company's Buhl 1, NW SE SW 23-1s-1w, assumed new importance when it swabbed 685 barrels in 22 hours after a 25-quart shot in Benoist sand at 1523-38 feet. It was estimated as a 300-barrel well previously. Shell Oil Company, Magnolia Petroleum Company, Gulf Refining Company and an independent operator have already begun tests in the area. Williams et al's Illinois Central 1, ¼ mile southeast of the discovery, SE 23-1s-1w, was drilling plug, and will be the field's second completion. Structurally, it was considerably lower than the Buhl well but operators were hopeful of completing it as a small producer.

Two Washington County wildcats were abandoned. Ohio Oil Company's E. Buchner 1, NE NW 9-2s-2w, was abandoned in Devonian lime at 3051 feet. Gardner & Woods' Harre 1, NE NE NW 33-2s-3w, was dry in McClosky slightly below 1500 feet.

Record Wells at Centralia

Two record wells were completed on the Clinton County side of the Centralia field. Gulf Refining Company's Felton 5, CW½ SW NE 35-2n-1w, flowed 12,003 barrels in 24 hours from Devonian lime at 2905 feet following a 3000-gallon acid treatment. It made the greatest 24-hour flow in the state's history. W. C. McBride's Carson 9, CE½ NE SE 35-2n-1w, flowed 3735 barrels in 6 hours, or at the rate of 14,940 barrels a day, from 2912 feet after 5000 gallons of acid for the greatest potential production mark ever attained by an Illinois well. Less than ¼ mile northeast of Felton 5, Gulf Refining Company's Hoffman-Felton 1, NE 35-2n-1w, was shut down for orders after flowing water and no oil from 2937 feet.

A west outpost to the Lake Centralia-Salem field, Marion County, Renon & Fisher's Fox 1, NE SE SW 25-2n-1e, was shut down for orders at 3653 feet after coring pay at 3616-30 feet which carried both oil and water. Because pay was found much lower than in any producing wells on the west edge of the field some observers were inclined to believe Fox 1 is on the east edge of a structure separate from the Lake field. Another outpost, Picard & McGuire's West Estate 1, NE NE SE 35-2n-1e, should prove or disprove that theory within a few days. West and south of Fox 1, the West Estate 1 was drilling at 2950 feet. An east outpost, Steele, Miller et al's Foster 1, NW SW SW 11-1n-2e, was abandoned at 3775 feet after topping a dry Devonian at 3694 feet.

The week marked the second anniversary of the discovery of the Lake Centralia-Salem field which in 24 months has yielded an estimated 87,083,000 barrels of oil and is now averaging over 240,000 barrels daily. Productive in five horizons, the field has more than 2100 wells.

Kingwood Oil Company's Danks 1, the company's newest Clay County wildcat, NW SE NE 5-5n-5e, has been abandoned at 2723 feet. A fishing job which began a week ago was never finished, as the well was running quite low structurally.

A light oil show was cored in the Carper sand at Carter Oil Company's J. E. Cobb 1, a wildcat 6 miles north of Mattoon in Coles County CSW SE 10-13n-7e, but the test was drilling ahead in Chattanooga shale below 3000 feet to explore the Devonian lime. The company's J. H. Seaman 1-A, two miles south of Mattoon, which reopened the Mattoon field, was making an estimated 135 barrels a day on the pump from McClosky lime at 2002-12 feet after cleaning out.

In Edwards County, Superior Oil Company's C. Green 1, SW 19-2s-11e, was coring Devonian lime below 5001 feet. The first Bridgeport sand well in the Albion pool, also in Edwards County, Morrison & Noah's Houston Barnes 1-B, NE NE NE 24-2s-10e, was estimated as a 75- to 100-barrel well after a shot of nitro. Previously, the test made about 50 barrels daily from 1592 feet.

Illinois Permits

Permits for drilling 75 tests for oil and gas were approved by the Illinois State Department of Lands & Minerals last week, a gain of 2 over the previous week.

Clinton County led the state with 16 permits, followed by Marion County with 12, Fayette 9, White 8, Wayne 7, Richland 4, Bond, Jasper, Wabash and Washington 2 each, and Brown, Clark, Clay, Crawford, Edgar, Edwards, Gallatin, Lawrence, Pike, Saline and Shelby, 1 each.

Indiana

Clore Pay Believed Added In Griffin Field

A pay horizon new to the Griffin field—tentatively identified as the Clore, at 1825 to 1835 feet—is producing 200 barrels daily on the east side of the field from C. R. Obermeyer's William Skiles 1, SW NW NE 18-3s-13w. The test was drilled through a dry McClosky last winter, and had been inactive for several months.

East of production in the Griffin field and a mile south of a dry McClosky test drilled recently by Cherry & Kidd, Morgan H. Brown et al are drilling at 1345 feet in M. Sullivan 1, SE NW SW 20-3s-13w. Bates and Lichlyter, Evansville, are contractors.

West of present Griffin field production, Hall Edward's Amanta Maier 1, SE SE SE 14-3s-14w, was a Cypress-sand completion rated at 420 barrels natural in 24 hours from 2491 feet. Three other tests are drilling on the lease.

In the New Harmony field of east Posey County, Superior Oil Company's New Harmony Realty Company 27, SW NW SE 8-5s-14w, ¾-mile west of production, made 75 barrels through ¼-inch choke in 6 hours from McClosky at 2972 feet after 2000 gallons of acid.

Two new tests were spudded in the West Francisco field of east Gibson County, William Barthold's Ellis Keeton 1, NE NE 15-2s-9w, and Midwest Development Company's George L. Sturgeon 1, NW NW SE 10-2s-9w.

Kentucky

Henderson County Wildcat To Test Pennsylvanian

Two miles north of Sebree, Henderson County, L. T. Boyce et al spudded Arabella Walker 2 for a Pennsylvanian-sand test just 100 feet north of a dry hole through the McClosky, abandoned when casing collapsed on attempt to plug back and test the prospective Pennsylvanian pay.

In the Waitman pool of Hancock County, Fitzpatrick and Hayes spudded R. Ellis 1.

Abandoned at 1140 feet was a Daviess County wildcat, northeast of Gatewood, Sohio Corporation's Roy Bickett 1, several miles from production.

In Christian County, 12 miles northeast of Hopkinsville, Wilson & Wilson's No. 1 McDonald, wildcat inactive for several months, has been abandoned at 360 feet.

In the Cane Run section of Daviess County, ¾-mile southwest of Cane Run, I. C. Huff et al's Rollie Ambrose 3, was a failure through the McClosky at 1262 feet.

In the western tip of West Kentucky, near Wycliff, E. A. Boyd's Rudd 1, wildcat, was drilling below 1000 feet.

Rule That Courts May Not Split Commission Orders

The Third Court of Civil Appeals at Austin held last week that courts are powerless to invalidate some wells granted under a railroad commission order, and to approve others granted under the same order. The ruling was handed down last week in a case styled Humble Oil & Refining Company vs. Tom Potter.

Potter had obtained an order allowing the drilling of six additional wells on a nine-acre tract. The district court held that four of these were improperly granted, but that two of them should be allowed. The appellate court ruled that all should have been invalidated.

Minnie Bock Hearing

The Texas Railroad Commission has scheduled a hearing for July 9, at Austin, to consider an application for an increase in the allowable in the Minnie Bock field, Nueces County.

North Texas

Montague County Deep Test Makes Small Oil Producer

The deep conglomerate trend of production across northern Montague County contributed an oil strike on the east edge of the Nocona townsite when Sinclair Prairie Oil Company's Lena Benton 1 flowed by heads on brief tests. Production is from saturated section at 5127-35 feet in Bend series, topped at 5056 feet. The well was plugged back to 5135 feet after finding the Ellenburger dry at 5200-5416 feet. The well flowed 20 barrels of high-gravity oil in 20 minutes via casing, then flowed 10 barrels in 15 minutes after being shut in for 12 hours. Storage has been ordered erected, as a small oil well is assured. Benton 1 is in northwest corner of 121.3-acre tract, T. R. Jackson Survey, ¾-mile east of the townsite and 1¾ miles east by north of nearest production in the Nocona deep pool.

Disappointing results were attained by some of the deep wildcats being drilled near the Clay-Montague County border. Sinclair Prairie Oil Company's Milam 1, 3½ miles northeast of the Ringgold 5700-foot Bend pool, proved dry in Ellenburger at 5795-6000 feet, and has plugged back to 5710 feet to resume testing in Bend zone, topped at 5590 feet. This outpost swabbed a small volume of oil through casing perforations at 5660-76 feet, with 7-inch at 5683 feet. No saturation was recorded in the lower Bend. Fain-McGaha Oil Corporation's Spring 1, northwest offset to the Ringgold discovery, has failed to maintain steady oil flow and machine will be moved in to condition the hole and swab via casing. It is believed that drilling fluid has partially mudded off the conglomerate pay, topped at 5674 feet, with dry shale and lime at 5690-5702 feet. The well flowed 39, 21, 6 and 1.4 barrels the first 4 hours of official potential test through ¼-inch choke. Pressure built up to 1400 pounds on casing and 700 pounds on tubing after 18-hour shutdown, then the well flowed 15 barrels oil in 30 minutes. Gulf Oil Corporation's Worsham Estate 1, southwest offset to the discovery, was drilling at 3460 feet.

Harvey Drilling Company and Sinclair Prairie Oil Company's Threadgill 1, western Montague County wildcat, was awaiting orders at 6351 feet, with top of Bend tentatively placed at 6107 feet. A fishing job was in progress with a bridge about 500 feet from bottom when work was suspended. Peckham et al's Lawson 1 was drilling at 3600 feet, having topped Ranger lime marker at 1815 feet, and Walter Gant et al's Laird 1, also west portion of county, was drilling at 3950 feet.

Wirt Franklin and W. B. Omohundro's Staggs 1, 3½ miles south of the Petrolia shallow field, has logged nominal oil stain and odor at intervals in the Bend series, topped at 5872 feet, and drill-stem test was due to be made late last week at 6364 feet after gaining some encouragement from granite wash at 6356-59 feet. John E. Farrell et al's Malone 1 was drilling at 5910 feet in shale, and E. C. Norwood-King Oil Company's Hapgood 1 was drilling shale at 5605 feet.

The Cambrian, or Hickory sand series, is believed to be the next objective of Amerada Petroleum Corporation's Goodpasture 1, northwestern Wilbarger County wildcat that has passed up flowing production in the Canyon and Strawn and assurance of a commercial oil producer from Ellenburger saturation at 6306-30 feet. Drilling was underway late last week at 6670 feet, with dry dolomite prevailing since logging water at 6362-68 feet. Comparatively few tests have drilled through the Ellenburger in North Texas counties, and no production has been found below the latter dolomite beds. However, the Cambrian is considered a potential source. Herbert Oil Company is preparing to start operations on C. B. Peters 1, BBB&C, Section 1, a projected 6000-foot test.

Fourth Zone at Walnut Bend

Sinclair Prairie Oil Company's Huddleston 1, southwest outpost for the Walnut Bend field, Cooke County, established the fourth oil zone for the area in pumping 86.4 barrels of oil in 10 hours from sandy-lime at 4108-22 feet in Upper Strawn. The volume of water was not reported. The 5½-inch casing, cemented at 4961 feet, was perforated opposite the above saturation after the well failed to produce in the 4700 - 4800 - foot and 4900 - 5000 - foot Strawn zones and also the Simpson, which has recorded a few oil producers. The hole was plugged back from dry Ellenburger at 5938-6110 feet to 4130 feet. The company's Best 18, northeast edge test, has cemented pipe to test broken saturation at 4912-24 feet. The pay is level with a producer to the west, but formation samples proved hard and somewhat tight. Walnut Bend has 62 flowing and pumping wells, and only 1 failure, involving the second test drilled. This is an unusual record for a deep area in North Texas.

The 53-foot pay section logged by Continental Oil Company et al's O. O. Ross 1-A, third well for the Jolly pool, western Clay County, responded to treatment with 8000 gallons of acid under 1300 pounds pressure with an official proration gauge of 263 barrels of 43-gravity oil in 2¾ hours through ¾-inch choke on 2-inch tubing. It earned a potential of 2296 barrels for an allowable of 26 barrels daily. Production is from Bend at 5384-5437 feet followed by shale to 5440 feet. The performance of this well gives the pool a higher rating from an oil yield standpoint, but the area is undetermined as the wells are offsets.

Southern Clay County gained a new wildcat and listed a Strawn failure. Deep Rock Oil Corporation's Dycus 1, SEc N½ TE&L Section 2602, 1½ miles west of the Shell-Henderson 3500-foot 2-well pool, was awaiting orders after fulfilling depth contract at 3600 feet in shale. An oil sand at 3254-55 feet was the only show found in the Strawn. L. O. McMillan et al's Tom Watson 1, NE TE&L section 2620, is contracted to 3750 feet. It is on a small block purchased last spring at $25 per acre cash, and is several miles northeast of a 5207-foot failure drilled last month by L. T. Burns on the same ranch.

Six contractors' rigs are in service in the Bonita 4-well deep area, eastern Montague County. Sinclair Prairie Oil Company is drilling 5 tests, while Magnolia Petroleum Company is making its second test. In the Bowers pool, United Producers Company and Continental Oil Company's Braman 2 passed up oil saturation in the Upper Strawn and also in granite wash and lime at 3808-20 feet. It was drilling at 3852 feet. Mudge Oil Company's Custers 1 is seeking an east extension.

Seitz-Comegys & Seitz, Inc.'s Freeman 1, northwestern Denton County 6000-foot project, was drilling shale at 5040 feet. No shows have been recorded in the Strawn series. Amon G. Carter et al awarded contract the past week for the drilling of Allen 1, NWc Stephen Westbrook Survey, western Denton County and 4 miles northwest of Justin. It is to be a deep test. The Trentman Company, Fort Worth, has obtained permits for 2 tests on a block, centering 6 miles south of Denton, but only one is scheduled to be drilled.

West extension for the Upper Strawn pay in the Hull-Silk field, Archer County, is assured through Magnolia Petroleum Company's May Rutty 9, first deep test on this shallow property, cored solid oil sand at 3732-58 feet. Cable tool unit was being installed late last week to drill plugs from 7-inch pipe at 3720 feet.

Boost Allowables of Three Scattered Texas Fields

An increase in the allowable for the North Novice field, Coleman County, from 31 to 50 barrels per well was provided in an order issued by the Texas Railroad Commission last week.

The commission also raised the allowable for the Rowe and Baker field, Henderson County, from 76 to 200 barrels per day.

In an unusual order, the commission raised the allowable for the Sandy Point field, Brazoria County, retroactive to May 20. The order, issued on June 24, increases the allowable from 120 to 184 barrels per day. The commission rarely issues an order increasing field allowables retroactive beyond the first of the month in which the order was issued.

Ask 10-Acre Spacing for Manila, Jim Hogg County

C. A. Daubert has requested 10-acre spacing for wells in the Manila field, Jim Hogg County. At a hearing before the Texas Railroad Commission last week, Daubert asked that proration be placed on an acreage basis with a maximum of 15 acres assignable to the final well drilled on a lease.

Production in the area was found at 2603 feet, and 10 feet of saturated Lower Cockfield sand was taken. The field is located on an elongated lensing structure, estimated to be 3 miles long. The oil is 26.9 gravity, and no gas cap has been found. The operators ask for 40 feet of surface casing cemented to the surface.

Texas Canadian Moves

Texas Canadian Oil Corporation has announced removal of its general offices to the second floor, Blackstone Building, Tyler, Texas.

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West Texas

Extension for Sand Hills, Crane County, Indicated

Extension of the Sand Hills field, Crane County, northeast appeared probable when Gulf Oil Corporation's Waddell 12, C NE Section 30, Block 26, developed 14,750,000 feet of gas at 4385 feet and logged first oil saturation at 4392 feet. At the latter depth, the well sprayed one barrel of oil hourly in addition to water carried from up the hole. A fishing job occurred in deepening to 4404 feet. This well is 1¾ miles north by east of the main field, and is a mile east by south of a small well that is lower on structure.

Southeastern Andrews County was assigned a projected 5000-foot wildcat, involving Texas Pacific Coal & Oil Company and Seaboard Oil Company's Midland Farms Company 1, SE NE NW T&P Section 1, Block 40, near center of 4000-acre block held on a fifty-fifty basis. Rig was moved in late last week. Location is 12 miles from nearest dry hole, and 15 miles northeast of the North Cowden field.

Lower Permian is to be tested by Moore Exploration Company's Currie 1, projected 4200-foot wildcat for Glasscock County and on acreage farmed out by Shell Oil Company. Location is C SE SW T&P Section 25, Block 34, a mile northeast of the company's Miller 1, which encountered a show of oil at 2890-96 feet in drilling to 3070 feet in 1935.

Three fourths-mile northwest extension for the Wasson field, Yoakum County, is likely to be established by Grady H. Vaughn and High Point Oil Company's Smith 1, C SE SE Section 703, which was drilling at 5050 feet with first saturation due near the 5100-foot level. This outpost registered a favorable structural position in logging top of brown lime at 4040 feet and first solid lime at 4550 feet with an elevation of 3626 feet. On the latter marker it is 18 feet higher sub sea than J. W. Murchison and L. Fikes' Sawyer 1, situated ¾ mile due east and the only dry hole on the north border of production. The failure was drilled in January, 1938, and is not considered a decisive test. Smith 1 logged top of solid lime 13 feet lower on structure than Deep Rock Oil Corporation's Anderson 1, nearest producer.

Plymouth Oil Company and Amerada Petroleum Corporation's Brownfield 1, eastern Yoakum County wildcat, was drilling at 5120 feet in solid lime topped at 5030 feet. It is relatively low on structure, having logged Yates at 3490 feet, instead of 3310 feet as originally called, and top of brown lime at 4560 feet with an elevation of 3501 feet. It is 4 miles east of the Waples-Platter 1-well pool. The latter area is in line for more development, if a pending deal is concluded whereby Shell Oil Company will contribute acreage and dry-hole money to Tom N. Sloan et al for the drilling of a 5500-foot test in SW SE Section 565.

Terry County portion of the Slaughter field was adding its second producer through Gulf Oil Corporation's Mallet 3, which tested 305 barrels of oil natural on 24-hour swabbing test at 5035 feet. Acid will be employed to attain steady flow.

Production test is to be made of Ray Albaugh et al's John Robinson 2, northwestern Dawson County wildcat, from oil saturation found below the water level in the regular Permian. Water was encountered at 4983-5056 feet, with an elevation of 3118 feet. Slightly saturated lime was found at 5138-63 feet, and show of oil and gas at 5206-14 feet is considered adequate to warrant landing a liner for a test.

Helmerich & Payne and Atlantic Refining Company's University 1, Andrews County pool opener, is to be placed on pump after swabbing 4 to 5 barrels of oil hourly following nitro shot at 4475 feet. Atlantic Refining Company's University 1-2, north offset, was drilling at 4360 feet, and will take in the entire section before making a production test, while University 1-23, 2 miles south, was drilling at 4050 feet. Both require production this week to forestall lease expirations.

Gulf Oil Corporation's Wristen 5, first Ordovician test for Ward County and the deepest active test in the district, was drilling lime at 8106 feet. It is in the upper Ordovician.

Linking of the North Cowden and Foster-Johnson areas, Ector County, was temporarily delayed when R. R. Rhodes, J. D. Tompkins et al's T. P. Land Trust 1-C, SEc SW T&P Section 23, Block 43, southwest outpost for the former, was abandoned in water at 4336 feet. However, local conditions may account for the abscence of oil saturation above the water level, and later development may unite the two areas with a narrow strip of production. Sinclair Prairie Oil Company's Johnson 1-64, NEc SE T&P Section 28, Block 43, T-1-N, ¾-mile northwest extension for the Foster-Johnson field, pumped 95 barrels of 34-gravity oil initial after nitro shot at 4162-4226 feet, with the hole bottomed at 4247 feet, or 1217 feet sub sea.

In Concho County, Floyd C. Dodson et al's Bob Wilson 1, 10 miles southwest of Eden, tested 1 barrel of oil hourly from sandy-lime at 3753-56 feet. Casing will be cemented for a production test.

Forty-Acre Spacing for East Flour Bluff Asked

Humble Oil & Refining Company requested 40-acre spacing for wells in the East Flour Bluff field, Nueces County, at a hearing before the Texas Railroad Commission last week. They asked for straight acreage proration and an equitable allowable in proportion to similar fields in the area. Presumably this equitable allowable would be higher per well because of the large amount of acreage assigned to a well.

The plan was approved by Barnsdall Oil Company, the only other operator in the field; however, Barnsdall wanted a high allowable because the production is on submerged State leases which expire in 22½ years whether all the oil is withdrawn or not.

Testimony was presented by Humble to show that production in the field is found between 6780 and 6800 feet in the Frio formation. The sand appears to be better than that in the Flour Bluff field.

The company has asked for a conductor string set 80 feet below the bottom of the bay and cemented to the surface. In addition, they ask for 1000 feet of surface casing cemented to the bottom of the conductor pipe, and an oil string cemented at least 1000 feet above the shoe.

Seek Repressuring Permit In Benavides Field

Hiawatha Oil and Gas Company has requested a permit from the Texas Railroad Commission to take gas from the Hiawatha sand in the Benavides field, Duval County, and inject it into the Parr sand. There is only one well producing from the Hiawatha horizon and about 64 wells producing from the Parr sand. Of these wells, 30 are operated by Hiawatha and Benedum-Trees Oil Corporation.

The virgin pressure in the Parr sand was 1900 pounds and it has subsequently declined to 1465 pounds.

Superior Starts Two Tests On Large Shelby County Block

Superior Oil Corporation last week made two locations on a large block of wildcat acreage it has in Shelby County, Texas, bordering the Louisiana line. One of the tests, Pickering Lumber Company 3, Thomas Haley Survey, is planned as a 6200-foot test. The other will seek production in the Tokio and is Pickering 2, B. H. Simpson Survey. The latter test is already drilling below 2000 feet after an unsuccessful attempt to test a chalk section at 1843-53 feet.

East Texas Hearing To Be Held July 2

Most of the testimony presented at the East Texas hearing, scheduled by the Texas Railroad Commission for July 2, at Kilgore, is to come from oil companies, rather than from the commission, it became apparent last week when officials said that the only evidence the commission will offer is data on changes in pressures which have taken place since the last hearing.

Operators who are opposed to the old order are expected to present evidence to show that it is improper, and that an order with an acreage factor should be entered.

It is expected, however, that some companies will favor returning to the old plan for two reasons. First, they think the field is developed too far on one basis to change now; second, they think that the current order is more equitable, especially with respect to allocations made to west edge wells.

Ask Minimum Allowable For Rowe and Baker

A minimum allowable ranging from 330 to 500 barrels daily for the Rowe and Baker field in Henderson County has been requested at a hearing before the Texas Railroad Commission. There are two producing wells in the field which are now allowed 38 barrels daily. Production is found in a sand at 3100 feet.

Richards and Holloway, Incorporated, requested the increase and presented evidence to show that the oil is 31-gravity crude, 65 cold test, which is useful for fuel purposes, contains only about eight percent gasoline after blending.

The oil which is trucked from the field sells for 40 cents a barrel, and most of it is delivered to a refinery at Kilgore.

East Texas

Chapel Hill Starts Drilling Race With Lease Expirations

An aggressive drilling campaign for the Chapel Hill field, eastern Smith County, began shaping up the past week when contracts were awarded for the drilling of 5 Lower Trinity tests on short-term leases. Other approaching expirations and the natural offsets due from the 2 Pettit zone oil wells and the pair of Lower Glen Rose gas-distillate wells, plus offsets to accrue from the authorized tests will assure the area an active drilling program for a long period. One of the largest lease owners has more than 50 expirations prior to the end of 1941, while the majority of the other participants have a proportionate number of short term contracts. However, the gas-distillate producing sector will not require tests on every short-term lease, as some of the lessees have signed up mineral units, involving from 400 to 600 acres each. A gas-distillate producer will perpetuate all leases within a unit, but if oil is found the unit agreement is avoided. An unexpected oil well will necessitate the starting of wells on each tract within the grouped leases.

Production extends along a north-to-south trend for 4½ miles. The gas-distillate wells produce from the 7400-7500-foot sandy-lime, and are in the south half of the field. The 2 oil wells produce from the Pettit at 8100-8200 feet, and are the deepest in the East Texas basin.

The latest oil completion involves Sun Oil Company's Everhart 1, SWc of 75-acre tract, Phillip Lively Survey, which flowed 123½ barrels of 43.4-gravity oil natural in 10 hours through 3/16-inch choke. Pressure on casing increased from 1725 to 1825 pounds, while tubing pressure remained constant at 725 pounds during this gauge. Gas volume was rated at 307,000 feet daily. Closed-in pressure registered 2400 pounds on casing and 1800 pounds on tubing. Production is from 72 perforations at 8252-70 feet in Pettit. The hole was plugged back to 8280 feet after finding the Travis Peak void of oil or gas at 8365-8411 feet. Sun Oil Company's Sanders 1, ¾ mile south of production, failed to produce in the second Glen Rose, and was drilling at 7980 feet. It is 24 feet low on the base of the massive anhydrite, logged at 7335 feet, or 6875 feet sub sea.

Pure Oil Company authorized 2 tests, both offsetting gas-distillate producing leases, but no direct offsets. W. T. Emmons 1, southeast corner of 30-acre tract, Wm. Dickerson Survey, is west by south of the southern-most producer. O. B. Johnson 1, southeast corner of 50-acre lease, T. P. Payne Survey, is a short distance east of the discovery and purposely removed from the high point of the lease to enhance its chances for oil production. Shell Oil Company's J. W. Bacon 1, northeast corner of 100-acre lease, Enoch Tunnell Survey, mile southwest of the discovery. Sun Oil Company is rigging up for J. C. Jones 1, previously announced location for north end of 146.15-acre tract, L. H. Dillard Survey No. 110. Sun Oil Company and Shell Oil Company's Bishop Moseley 1, northwest corner of 76.6-acre tract, Levi Hands Survey, is ½ mile southwest of the oil discovery and on a 583-acre gas-distillate unit.

Chapel Hill was proved for gas-distillate by Hunt Oil Company's Bradley 1 in July, 1938. This well produces 10,000 to 12,000 barrels of distillate monthly in supplying gas to properties in the East Texas field. Shell Oil Company's Campbell 1 missed the discovery zone, but made an oil producer last February after perforating casing at 8036-68 feet. Hunt Oil Company markets the distillate and oil output, using an 8-mile line to the Overton section of the East Texas field.

In Bowie County, Shell Oil Company's Wall 1, 2 miles northwest of Maud, proved dry in the Woodbine series, topped at 2940 feet, and was drilling at 3230 feet.

S. J. Taylor et al's Reid 1, projected Lower Trinity test for the northwest edge of the Mexia field, was drilling at 4990 feet. It is the first deep test for the north portion of the faulted structure.

Manning & Pickens' Bell 1, southwest outpost for the Rowe-Baker pool, Henderson County, swabbed and flowed 15 barrels of oil hourly on preliminary test after perforating casing opposite Woodbine saturation at 3184-87 feet. A pumping unit is being installed.

JOE LINDER, geologist for Shell Oil Company, has been transferred from Wichita Falls to Tulsa.

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Southwest Texas

Jackson County Discovery Slowed by Mechanical Trouble

Dick Hahn, A. E. Masterson and R. B. Swiger's apparent discovery of a new Frio sand oil field in northeastern Jackson County hit a snag when salt water came in while a production test was underway. This was believed to have been the result of a bad cement job and the well was being reworked.

The operation, J. R. Robertson 1, in SE Section 22, had been drilled to 7506 feet by Heep Oil Corporation, then reworked by the present operators. Casing was landed at 6600 feet and perforated at 6514-18 feet, getting a flow of oil and wash water for 16 hours through 3/16-inch choke under 375 pounds tubing and 750 pounds casing pressures. It went dead, being loaded up with salt water. A squeeze job failed to cut off the water and a second squeeze job was made. At last reports, plugs had been drilled and a new test was underway through the same perforations.

The wildcat is located more than 2 miles northeast of the Texana field and about 6 miles north of the Lolita field.

Eight miles northeast of the Lolita field in Jackson County, interest is centered around a new wildcat, Barnsdall Oil Company's Tom Prichett 1, A. M. Clare survey. It is on a geophysical prospect which has had a great deal of attention by both Humble Oil & Refining Company and Stanolind Oil & Gas Company.

A new wildcat producer in Refugio County may be the discovery of a new pool or extension of either of two areas. Norsworthy Production Company's Fagan 1 flowed 68.75 barrels of 27.6-gravity crude in 24 hours through 12/64-inch choke under 475 pounds tubing and 1475 pounds casing pressures. Pipe had been perforated at 5655-58½ feet. When first tested, the well showed considerable water and it is presumed that it still is making a large amount of salt water. Location is more than 2 miles northwest of the Fagan field discovery and is 1 mile southwest of the McFaddin field. It is not producing from the 5900-foot Fagan discovery sand, but from a 5600-foot zone which was indicated as productive on the initial operation in the field. This would suggest that the McFaddin and Fagan fields may be merged.

Hewitt & Dougherty's Carver 1, I & G N Survey 176, extended the Wade City field of Jim Wells County 1½ miles to the southwest and opened the deepest Vicksburg sand in the area. The well was flowing gas and distillate, but not gauged, from perforations 5276-86 feet. The well topped the sand, likely Stillwell, at 5272 feet and casing was landed on bottom. The test had the McNeill sand, main producing zone of the field at 4904-11 feet.

A northwest offset to production in the Orange Grove field, Jim Wells County, W. C. McBride's Schrade 1 had uncovered a new sand, apparently in the Stillwell zone at 5632-42 feet. Drill-stem test showed for a distillate and gas producer and the hole is now standing, awaiting orders. It is expected to be plugged back to 2500 feet and sidetracked to recore upper levels. It is on the downthrown side of faulting, said to have a 130-foot displacement.

A new submerged producing area seemed assured with Skelly Oil Company preparing to recomplete State 1, Tract 385 in Laguna De los Olmos and 5 miles southeast of Rivera in Kleberg County. After being plugged back from 9428 feet, perforations were made 7458-60 feet and a 12-hour drill stem test made through 2½-inch tubing, using ¼-inch bottom and ⅛-inch top chokes, it flowed 17.3 barrels of 41.9-gravity oil with a negligible cut. The flow was under pressure of 2150 pounds open. Due to the fact that the gas/oil ratio was high, being 21,900 to 1, the holes were squeezed and another set of perforations made at 7390-93 feet and 7399-7402 feet, these being squeezed with 100 sacks of cement in effort to make a complete cutoff. New holes are scheduled to be made at some point between 7393-99 feet for another production test.

Humble Oil & Refining Company has some sort of Catahoula producer, likely a gas well, to establish another Marine area in Nueces County. State 1, Survey 723 of Nueces Bay and 2½ miles west of Corpus Christi, was cleaning from perforations at 3974-90 feet, showing 170 pounds working pressure while on 7/32-inch choke. It was making wash water, but may make some oil when finally completed. Humble Oil & Refining Company has a campaign involving several wells.

St. Charles area in Aransas County has its first completed producer in Continental Oil Company's St. Charles 2, 550 feet south of the first well in the R. D. Blassman survey. The first test blew out at 9335 feet, ran wild and finally bridged over. The new test was drilled to 8406 feet and liner set on bottom. Perforations were made at 8340-8400 feet and water was pumped for nearly two weeks in an effort to flood the sand and completely kill the first test. The hole was then plugged back and perforations made 7636-45 feet where the test flowed at the rate of 35 barrels of high-gravity distillate per day along with considerable gas through 3/16-inch choke under 1850 pounds tubing and 2450 pounds casing pressure. The well will provide gas for further development.

Republic Natural Gas Company's Rachal 38, which opened a new Frio sand for the East White Point field of San Patricio County, had been gauged. It flowed 28.6 barrels of 59.4 gravity distillate in 22 hours through 5/16-inch top choke, using control valves in the tubing. Pressures mounted to 2240 pounds on the casing, while flowing pressure through the tubing was 850 pounds. Perforations had been made at 5760-70 feet, or more than 100 feet below the regular field pay.

Victoria County's new Bloomington area gained three new locations by the Texas Gulf Producing Company. At the same time, the company was testing Wisehart 1, 5600 feet northeast of the discovery, at 5183-85 feet where perforations had been made. Linville 1, 4000 feet southwest of the initial test, was attempting a completion through holes at 6214-16 feet.

Failing to make a producer when perforated at 5293½-95½ feet, Colton & Colton's Terrell 1, discovery of the Terrell pool in Victoria County, plugged back to test sand at 5275-85 feet. The well had first made a small producer in the 5275-85-foot level, but was deepened to 5610 feet in search of new pays.

Calhoun County Wildcat Shows for Miocene Discovery

A new oil field was indicated four miles southeast of Seadrift, Calhoun County, by Coronado Corporation's Welder 1, which ran tubing and was being washed in June 28. The well, after being drilled to 10,002 feet, and testing salt water at several points above, was plugged back and perforated at 5654½-55½ feet. On a drill-stem test, it recovered 965 feet of oil, some mud and developed 550 pounds working pressure in 16 minutes. The sand section, logged at 5635-70 feet, is in the Miocene. The wildcat is on a 17,978-acre drilling block and is 1800 feet northeast of a test abandoned by Continental Oil Company on the same land.

Sun Oil Company apparently had developed oil production in the North Rincon field of Starr County. King 1, SE Section 511 and a mile south of Lehr 1, gas producer, made a drill-stem test at 4948-57 feet and recovered 30 feet of mud, 90 feet of oily mud of which 80 percent was oil, 100 feet of clean oil and 80 feet of salt water. The test was through ¼-inch chokes, top and bottom, and lasted 30 minutes. The top hole working pressure was 180 pounds, while the bottom was 500 pounds. It was coring below 5025 feet at last reports.

Shell Drilling Second Deep Test in Colorado County

South Texas Wilcox play was being directed to the Sheridan area in Colorado County where Shell Oil Company is drilling its second deep test. Goodrich 1, ½ mile west of the discovery producer is expected to be coring for the 8100-foot pay at the beginning of the week. The well is said to be running slightly low.

In Webb County, 10¾-inch protection string had been run to 4480 feet in Tide Water Associated Oil Company and American Liberty Oil Company's Bruni 8, in the Bruni field. It is to test Wilcox sands around 9200 feet. The well offsets Bruni 7 which blew out from 8959 feet and stuck drill stem.

H. R. Cullen et al's Washburn in eastern LaSalle County is credited with having drilled through the Wilcox section and was in the Midway or deeper. It topped the Wilcox at 3612 feet and found one oil sand and one gas sand in the section.

JOE J. TRAVIS has been named geologist for Barnsdall Oil Company at Corpus Christi, replacing J. C. Poole, resigned.

Texas Gulf Coast

Three Fields Opened and Casing Record Broken

The week provided three new fields and received a new deep-drilling and long casing-string record. Two other wildcats which indicated production and were testing added to the general interest.

In Matagorda County, The Texas Company found the district's fifth field for 1940. Pierce 1, on the Blessing prospect, 1¾ miles southwest of Blessing, was shut in after flowing 40 barrels of 56-gravity distillate and 1,250,000 cubic feet of gas daily from perforations at 8290-8300 feet, with tubing pressure of 2800 pounds and casing pressure of 1400 pounds. A ⅛-inch choke was used for the gauge, which showed a little water. Production was established in a central zone of a 50-foot sand body topped at 8270 feet. Two sands logged just above this point were drill-stem tested and yielded 200 feet of distillate in 7 minutes.

The prospect was found by Gem Oil Company and Humble Oil & Refining Company, the latter company becoming a large leaseholder by acquisition of the former's acreage. The discovery is on a 4500-acre block chosen after reflection seismograph work. The company's Taylor 2, wildcat on the Sugar Valley prospect, Matagorda County, was drilling at 8670 feet toward projected depth of 9500 feet. Parker 1, Midstates Oil Corporation's northeast flank test in the Bay City field, set 7-inch casing at 9385 feet and was testing at 9230-50 feet, an oil strata underlying 50 feet of gas-distillate sand. The test also logged gas-distillate sands at 9300-09 feet.

The sixth strike for 1940, and the fourth new distillate field, was Rowan & Nichols' Hubbard 1 on the North Liverpool prospect, Brazoria County, which flowed 5 barrels hourly, 30 percent 40-gravity distillate, 70 percent mud and wash water, through ⅛-inch choke, from perforations in Frio at 8538-54 feet. On drill-stem test, this zone yielded 1850 feet of oil and 150 feet of brackish water under 1500 pounds pressure in 26 minutes, a flow-rate calculated at 80 barrels per hour. On production test, tubing pressure was 950 pounds and casing pressure was 250 pounds. A zone at 9107-34 feet yielded 100 feet of 51-gravity distillate in 9 minutes. Heterostegina was topped at 7200 feet, Marginulina at 7500 feet, and Frio at 8100 feet.

The district's deep-drilling record, held by Glen McCarthy's Houston Farms 2, 11,760-foot well at Chocolate Bayou, was eclipsed by the same operator, who drilled Munson 1, wildcat on the Bailey's Prairie prospect, Samuel Carter Survey, southwest of Angleton, Brazoria County, to 11,860 feet. A new casing-string record was also established as 5½-inch was run to 11,841 feet for test of several sands logged below 11,500 feet. Electric log registered a gas sand at 11,500 feet. The test was waiting on cement, with production tests scheduled as soon as possible.

Sun Oil Company's Stern 1, northeast outpost at Angleton, Brazoria County, flowed 350 barrels of salt water and 33.7-gravity oil through ¼-inch choke with tubing pressure of 2500 pounds and casing pressure of 2800 pounds, to register a mile extension for this field. Water content of the fluid was 75 percent. Humble Oil & Refining Company was also trying to extend the field with Mettler 2, in which tubing had been run to 10,605 feet for production test. North of Danbury, the company's Bassett-Blakely 3 was fishing for junk after coring to 7648 feet. Gulf Oil Corporation continues to seismograph Eagle Nest and Manor Lake prospects in the western part of the county.

Chambers County Field

Seventh new field for the district and third new oil field, was opened by Sun Oil Company's Smith 1, 3 miles northwest of the Seabreeze field in Chambers County, Section 83 of the T&NO Survey. The wildcat was flowing an estimated 150 barrels of fluid into burning pits. Fluid tested 6 percent wash water, remainder 32-gravity oil. Flow was through ¼-inch choke from 8849-53 feet, with tubing pressure of 2500 pounds and casing pressure of 2800 pounds. Pipe was set on bottom at

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8865 feet in side-tracked hole. Another test by the company in Section 82, on a 40-acre tract leased from Marrs McLean, is rumored as probable.

Humble Oil & Refining Company ran 7-inch protection string to 9225 feet in State 1-A, Red Fish Reef wildcat in Galveston Bay, off the Chambers County shore, and was drilling toward 9500 feet before stopping for tests. Trouble was experienced in running casing as the well attempted to blow out. Independent Exploration Company is seismographing in Trinity Bay, while Texas Gulf Producing Company has a crew on Oyster Bay, southeastern Chambers County.

San Jacinto and Walker counties, non-producers, have fair prospects. In northern Walker County, Texas Long Leaf Lumber Company 1, E. J. Deu Pree's wildcat in the Mary Millsaps Survey, 2 miles east of Houston County's Kittrell field, set pipe to test 110 feet of sand in the Wilcox at 2790-2900 feet. This zone was revealed by electric log and confirmed by cores at 2790-2835 feet showing oil and gas. Deu Pree has an 1800-acre block and recently drilled Texas Long Leaf Lumber Company 1, 250 feet from No. 2, which was abandoned at 3113 feet, with light shows at 2500 and 2900 feet.

Jack Frazier drilled Shell Oil Company's Coline Oil Company 1, wildcat southwest of Shepard in southeastern San Jacinto County, to contract depth at 10,001 feet and took the well over, along with 80 surrounding acres, the company retaining an override. Frazier ran casing to 7380 feet, and will test sand at 7805-18 feet which yielded 540 feet of 34-gravity oil and 630 feet of salt water on drill-stem test.

Coincident with the present period of wildcatting success, general activity in the district has increased to a point only 5.2 percent below that of 1939, using completions for the first 6 months as an index. While numerically wildcatting is subnormal, the large number of locations staked in proven fields has brought 192 rigs into the district, 25 percent more than a year ago. There are 23 geophysical crews seeking new prospects or detailing old ones; 20 of them with reflection seismograph, 1 with gravimeter, 1 with eltran and 1 with magnetometer.

Latest gauge on Joyce Richardson and Christian-Carpenter Drilling Company's Marks 1, discovery on the Ogburn prospect, northwestern Harris County, was 108 barrels of 58.6-gravity distillate daily, with 2,000,000 cubic feet of gas, from 6918-26 feet, through 11/64-inch bottom-hole choke and ¼-inch surface choke. Tubing pressure was 1200 pounds, casing pressure 1700 pounds. Operators have installed a second separator and were experimenting to find the best rate of flow. Pan American Petroleum & Transport Company, Superior Oil Company and Cities Service Oil Company hold offsetting acreage.

W. M. Hobson's Allen 1, wildcat east of North Houston and southwest of Aldine, was waiting on orders at 7314 feet after running electric log and coring just above that depth. A sand at 7074 feet showed distillate on ether test, but a drill-stem test to confirm failed when the seat slipped.

John Mayo and Christian-Carpenter Drilling Company abandoned Josey Farms 1, Cypress wildcat in the Anderson Survey, Harris County, at 7509 feet, with Cockfield topped at 5980 feet, and salt water sands cored at 6142-6150 feet and at 6222 feet.

In Fort Bend County, Sam Bashara et al staked Alcorn Land & Implement Company 2, in the Wm. Stafford 1½ Survey, 6 miles southeast of Sugarland, 250 feet north of Strake Petroleum Company's dry hole on the same tract and 1870 feet southeast of Bashara's first test. The former flank test to the Sugarland field was abandoned at 7042 feet.

Loffland Brothers and H. M. Naylor were preparing to complete State 1, first test in the Brazos River bed at Thompsons. It found 60 feet of saturation in the Vicksburg, topped at 7840 feet, to indicate a good well. Loffland Brothers will move rig one location north of offset Naylor's Shanks 1. Superior Oil Company's George 1, Smithers Lake wildcat, was drilling below 9100 feet.

In Calhoun County, Ray Ranger & Wynn Crosby Drilling Company quit Wells Mineral Subdivision 1, Olivia wildcat, at 9011 feet after finding a few oil, gas and distillate shows near the bottom of the hole.

In Hardin County, Jack Frazier staked Mills 1, wildcat in the Kountze, or Gist, area of the S. B. Turner Survey. This Cockfield-Yegua test is projected to 8500 feet. The prospect was drilled by Frazier et al several years ago. Other holders are Sun Oil Company, Humble Oil & Refining Company, Gulf Oil Corporation and Republic Production Company.

In Montgomery County, Continental Oil Company left Bender Estate 1, Spring area wildcat, at 11,213 feet after topping Hockleyensis at 5179 feet and Yegua at 6253 feet. It cored salt water sand at 5280-89 feet and set 9⅝-inch casing at 10,493 feet. The company's seismograph crew continues to work northeast of Tomball in the Samson and Bunker surveys. Atlantic Refining Company has a seismograph crew working east of Conroe, and another in the Tamina area, where it is rumored that David B. McDaniel's Baldwin 1, wildcat standing at 9400 feet, will be taken over by a major company.

Wilcox production in the Racoon Bend field, Austin County, to supplement the present Jackson and Cockfield production, will be sought in Humble Oil & Refining Company's Woodley 17, projected 9000-foot test.

Stark 11, long western extension attempt for the Port Neches field of Orange County, has been abandoned by The Texas Company after checking consistently 350 feet low on structure.

Titanic Oil Company was rigging up a 2500-foot outpost east of South China, Jefferson County. Fontenot 1 is 466 feet out of the southwest corner of an 80-acre farmout from Magnolia Petroleum Company.

In Wharton County, Eura B. Oil Company was below 4400 feet in Hamburger 1, Glen Flora wildcat.

Texas Permits

The Texas Railroad Commission last week issued permits for drilling 146 new wells in Texas, 73 less than were allowed the week before.

Five permits were granted in the East Texas field, with 2 in Gregg, 1 in Rusk, 1 in Smith and 1 in Upshur County. From the remainder of the East Central Texas area, 6 locations were reported.

There were 24 permits approved in West Texas, while operators in West Central Texas listed 10 locations. From the Southwest Texas district, 36 locations were reported, and Gulf Coast producers were allowed to drill 16 additional wells.

Permits for drilling 32 wells were approved in North Texas, while 17 were authorized by the commission in the Panhandle.

Seek Twenty-Acre Spacing at Plymouth

Twenty acre spacing for wells drilled in the new Cryer Sand in the Plymouth Field, San Patricio County, was requested by operators at a hearing before the Texas Railroad Commission recently. The operators ask for straight acreage proration with 30 acres assignable to the final well on a lease. The other sands in the field are prorated on a per well basis.

The discovery well was the Mattie C. Cryer No. 1 and offsets to the north and west are not in this sand. This is the fourth sand in the Plymouth field and is found at 5600 feet, approximately.

Name Three Texas Areas

Lloyd West, chairman of the oil field nomenclature committee of the South Texas Geological Society has announced names for three new fields. Gallagher is the title of M. M. Miller's Gallagher 1, northeastern Jim Wells County; Boyle is the designation given George Boyle's Standard Trust 1, in Starr County, and Manila is the name of the area opened by Achning & Daubert's Wood 1, Jim Hogg County.

Louisiana Gulf Coast

Completions Running Over Double Those of 1939

Louisiana coastal activity continued unabated throughout June, a check of the six months completions showing 516 wells, against 295 in the same period of 1939. This expansion of activity was also reflected in the number of rigs in the field, 173, against 130 in operation at this time last year. While the discovery rate has been about the same as that of last year, 10 new fields being found in 1940, it appears that the abnormally large number of wildcats now drilling, 44, may accelerate this pace. Geophysical activity is extensive, with 28 crews operating in the district. Of these crews, 24 are reflection seismograph, 3 are gravimeter, and 1 is magnetometer.

After a series of tests, Gulf Oil Corporation abandoned Bowie Lumber Company 1, 12,512-foot wildcat on the Lake Boeuf prospect, LaFourche Parish. This abandonment is the third on the prospect, found in 1934 by seismograph and torsion balance. Gay's

Godchaux 1, Section 34-15s-18e, quit at 6226 feet, and Emerald Petroleum Company's Bowie 1, Section 53-15s-18e, was left at 8456 feet.

A new sand at 6360-85 feet loomed for Chacahoula field, LaFourche Parish, as Sun Oil Company prepared to test Dibert-Stark-Brown 1, 6495-foot hole on the southeast flank of the dome. Present production in the field is from 7200 and 7300 feet. Lisbon-Iberia Oil Company's Thibodeaux 1, semi-wildcat in the LaFourche Crossing area, gave indication of production from any one of three zones. The well was prepared for test of perforations at 10,135-139 feet. Drill-stem test at 10,072-087 feet and at 10,096-111 feet recovered 5 joints of 47-gravity distillate under 3600 pounds pressure, in 9 minutes.

The Woodlawn field, Jefferson Davis Parish, received an important extension when Union Sulphur Company's Johnson 3, ¾-mile west outpost, was completed flowing 275 barrels daily through 11/64-inch choke from 8108-13 feet with tubing pressure 875 pounds. North of the field 2100 feet, the company's Miller 1 tested salt water from perforations at 9592-95 feet, squeezed, and was waiting on cement before resuming testing.

In West Baton Rouge Parish, Standard Oil Company of Louisiana's Morley-Cypress 2, Bayou Choctaw, was being washed with oil in an attempt to complete in a new sand at 8470-80 feet. Pipe was set on bottom at 8600 feet. The test, Section 28-8s-11e, logged shows in broken sand sections at 8335-57 feet, 8436-46 feet and 8522-33 feet.

William Helis is expected to announce location for a wildcat test on the Section 28 prospect of St. Martin Parish, before July 20. Leases taken in Section 33-9s-7e have such a drilling commitment. Shell Oil Company has reflection seismograph crews working in 14s-12e and 8s-7e.

Fohs Oil Company was moving in materials for Mulvey Irrigation Company 1, 8500-foot flank test 3800 feet southwest of the 3450- and 4285-foot production at Gueydan, Vermilion Parish. Location is in Section 34-11s-1w. Union Sulphur Company has a reflection seismograph in 17s-1e, and a gravimeter in 15s-1e and 15s-2e.

Humble Oil & Refining Company has opened a new shallow sand at Potash, Plaquemines Parish, with Orleans Levee District 44, which flowed 21 barrels hourly through ¼-inch choke from sand at 4286 feet. Other production in the field is from 7700 feet.

In Cameron Parish, Phillips Petroleum Company was preparing to test Miami Development Corporation 1, Petit Cheniere wildcat. Protection string of 9⅝-inch casing has been set at 9582 feet, with 7-inch liner run from 9582 feet to bottom at 10,655 feet. First test will be of perforations at 10,197-211 feet. In the same parish, Union Sulphur Company has surrendered 7100 acres of Sweet Lake Land & Oil Company land west of Chalkley. The company drilled a 9782-foot dry hole in the area, while Stanolind Oil & Gas Company drilled a 9250-foot dry hole on the portion adjoining the Chalkley field. Gulf Oil Corporation is reported to be adding to its block near Hayes, north of the Chalkley field. Amerada Petroleum Company has reflection seismograph crews in the Mallard Bay area, and in 13-4w.

Trilby (Richie), Arcadia Parish, latest Louisiana coastal field, continues to flow 18 barrels daily through ¼-inch choke from McManus 1, drilled by Vincent & Welch and E. J. Nickols. Operators have gravel-packed in an attempt to increase production. Magnolia Petroleum Company has surrendered part of its acreage on the old Esterwood prospect, where a deep dry hole has been drilled.

In Evangeline Parish, W. M. Hamilton is assembling a block east of Stanolind Oil & Gas Company's Basile spread, in the southwestern part of the parish. The block embraces Sections 16, 17 and 41-6s-1e, with a 60-day drill or drop clause.

In Iberia Parish, P. L. Lawrence is taking leases in Section 25 and 36-12s-10e. Danciger Oil & Refining Company's LeRoy 1, DeRidder area, Beauregard Parish wildcat, was coring below 8200 feet. In the same parish, Bancroft field, Republic Production Company has a seismograph crew. Atlantic Refining Company has a crew in 4s-10w, and a crew in 17s-12e, St. Mary Parish, where The Texas Company has a crew in 16s-11e.

Hamman Exploration Company's Sabine Rice Lands 1, Bayou Chopique or South Edgerley prospect, Calcasieu Parish, Section 3-11s-11w, was a recent wildcat start. Wildcat abandonments include Shell Oil Company's Tatteran Community 1, Amelia prospect, Assumption Parish, Section 66-16s-14e, quit at 11,278 feet, and I. Delcambre's Delcambrie area test, Reynaud 1, Section 17-13s-5e, left at 696 feet.

North Louisiana

Olla Area Deep Hole Plugs Back to Shallow Wilcox

Two new shallow Wilcox wells were completed last week in the Olla field, LaSalle Parish, bringing to 16 the number of oil wells in that field, but immediate hope of securing production below the 2200-2400 foot level faded as a test there explored formations as deep as 5200 feet plugged back for testing of the shallow Wilcox.

Five locations were made at Olla. Both Placid Oil Company and Arkansas Fuel Oil Company who own all the present production at Olla, each completed one producer during the last week.

Placid Oil Company's Louisiana Central Lumber Company 17, C NW SE 19-11n-3e, 4 miles north of Olla production, after drilling to 5200 feet, plugged back and was arranging to perforate casing in the Wilcox where sidewall cores were taken, after swinging casing to 2550 feet.

Shell Oil Company, closed negotiations with Lodwick Lumber Company of Shreveport, whereby the former secures a six-months geophysical option on 6885 acres in township 19 north, range 11 west, Bossier Parish, in the shallow Bellevue field, for a proposed 4000 foot test. The company secured rights on levels below 600 feet, the shallow producing zone there now be-

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ing the Nacatoch around 400 feet. Minimum selection must be 1500 acres. Bellevue is a truncated dome in structure and was discovered as an oil producing field in 1921.

Gulf Refining Company is renewing leases around Homer, Claiborne Parish, in township 21 north, ranges 7 and 8 west.

Louisiana Permits

Twenty-eight drilling permits were issued last week by the Louisiana Conservation Commission, of which 16 were in North Louisiana divided among the following parishes: Bienville 1, Caddo 9, Grant 1, La Salle 3, Sabine 1, and Webster 1. The 12 in South Louisiana were in the following parishes: Ascension 1, Cameron 1, Evangeline 3, Rapides 1, St. Mary 2, St. Martin 2, Terrebonne 1, and Vermilion 1.

Arkansas

Union County Deep Test Cores Oil Sand

Another deep geophysical wildcat prospect in South Arkansas held attention last week after Standard Oil Company of Louisiana's Zimmerman 1, SE SE 29-18-16, Union County, logged a showing of oil in the Lower Marine series and then showed some oil along with mud and salt water in a drill-stem test.

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In a core from 6789-99 feet, with 8½ feet recovery, 4½ feet carried good saturation, with good ether cut and 3 feet straw-colored ether cut. The bottom 8 inches appeared to carry water. Elevation is 233 feet.

When formation tester was run with ¼-inch chokes at top and bottom in 15 minutes the test showed 420 feet of oil and mud and 1260 feet of salt water.

Another location was made during the week for the newly opened Paluxy-sand producing field at Fouke, Miller County. The new test is Gulf Refining Company's Eaton 1, SW NE 14-17-27, 2½ miles southwest of the discovery well of the field. Standard Oil Company is drilling below 707 feet in an offset to the discovery well.

Arkansas recorded only one completion last week, this being a 100-barrel well in the old Urabana field, Union County. Drilling is at a low ebb in South Arkansas. Only 3 tests are drilling in the Magnolia field; 1 is drilling at Atlanta, Columbia County, which has been virtually defined on three sides; and 1 is drilling in the Dorcheat field, Columbia County. No further locations have been made in the new McKamie field, LaFayette County.

Arkansas Permits

Four drilling permits were authorized last week by the Arkansas Oil & Gas Commission, as follows: La Fayette County—East Texas Refining Company and Erwin and Leach's Eliza P. Davis 3, NW NE 19-16-23; Robert Buchanan Estate 1, SE NE NW 19-16-23; Judy Bell Estate B-2, SE NW 19-16-23. Miller County — Standard Oil Company of Louisiana's Sturgis 2, NE SW 1-17-27.

A.P.I. Revised Standards Issued for 3 Production Items

New editions of three American Petroleum Institute specification standards of petroleum equipment recently have been published, according to C. A. Young, secretary of the Institute's Division of Production. They cover standards for line pipe, wire rope and all-welded oil storage tanks. The storage-tank standards are tentative. All new editions include changes previously published in supplements, as well as those adopted at the Twentieth Annual Meeting of the Institute, or subsequent to it.

The new editions are: A.P.I. Std. No. 5-L "A.P.I. Line Pipe Specification," seventh edition, superseding the sixth edition issued in August, 1935; A.P.I. Std. No. 9-A "A.P.I. Specifications for Wire Rope," tenth edition, superseding ninth edition issued in January, 1934; and A.P.I. Std. No. 12-C "A.P.I. Specification on All-Welded Oil Storage Tanks (Tentative)," third edition, superseding second edition issued in October, 1937. Prices are: No. 5-L, 75 cents; No. 9-A, 50 cents, and No. 12-C, 75 cents.

Carlile Pool Hearing

The Texas Railroad Commission has scheduled a hearing for July 1 on the application of W. I. Southern, Inc., for an increase in the allowable on its H. T. Carlile lease in the Carlile pool, Stonewall County.

Mississippi

Tinsley Dome North Outpost Shows for Oil Well

Slick-Urschel Oil Company's Slick 7, SW SW 36-11n-3w, on the north edge of Tinsley Dome production in Yazoo County, appeared a good oil producer in the Eutaw (Blossom) sand after missing production in the Woodruff and Stevens sands, productive at Tinsley Dome. With elevation of 221 feet this test topped chalk at 4667 feet and in a core at 5386-5426 feet in the Eutaw recovered 17 feet of oil sand. After electric log was taken, 7-inch casing was cemented. Total depth is 5442 feet.

Of five new locations, two were at Tinsley Dome and three were for wildcats. Four wildcat tests were abandoned, two in Holmes County and one each in Scott and Yazoo counties.

W. J. Richardson rigged and was ready to spud Maggie Berry 1, NE 15-9n-19w, Jefferson Davis County, South Mississippi, in an area where Superior Oil Company, Sun Oil Company, Exchange Oil Company, Fohs Oil Company and Gulf Refining Company have considerable acreage. Trico Oil Company, Waynesboro, Mississippi, had derrick up and was moving in rig for Jones 1, C SW SE 33-8n-7w, Wayne County. In Yalabousha County, North Mississippi, W. E. Stewart was moving in materials for Cora McRae 1, SW SW 25-24n-6e.

Fohs Oil Company was preparing to drill a wildcat on a block in 1s-11w, Perry County, southeast Mississippi. In the eastern part of the same county, The Texas Company had a seismograph unit at work, with another unit working on a block of acreage it recently leased in Walthall County from Fernwood Lumber Company. The block of 36,000 acres extends into Pike County and the company has six months to complete geophysical work on it.

Gulf Refining Company has a shooting unit in southern Montgomery County. Shell Oil Company is detailing its Carroll County block with seismograph. Phillips Petroleum Company has a seismograph unit working in Scott County, near Forest, and Rouse Exploration Company is doing geophysical work in Hinds County.

Exchange Oil Company's Wildwood 1, NE NE 6-20n-1e, LaFlore County wildcat, was shut down at 5329 feet, 17 feet in igneous material. Location is on a 13,000-acre block.

Alabama

Wildcats in Choctaw and Greene Counties Abandoned

Two wildcats were abandoned last week, one each in Choctaw and Greene counties. Near Bladon Springs in Choctaw County, on the Hatchetigbee anticline, Union Producing Company, after drilling to 9622 feet and setting a string of protective casing at 4900 feet, drilled new hole to 5558 feet

in trying to get back into old hole, and finally abandoned McCorvey 1, SE SW 20-9n-2w. It is the deepest hole ever drilled in Alabama. It was taken to 7520 feet in 1938 by Joe Modisette, and several months ago was taken over by Union Producing Company and other companies having acreage in the 30,000-acre spread.

Near Boligee in Greene County, L. M. Glasco, who took over the test from E. C. Johnston, abandoned Willis 1, SW SW 11-20n-1e, in Fort Payne chert at 2615 feet. The last 3 feet was cored with full recovery showing crystallized lime and chert. Electric log was run before abandonment.

J. Brian Eby is assigning acreage he secured in Mobile County to Humble Oil & Refining Company, the latter having approximately 300,000 to 400,000 acres under lease in Mobile and Washington counties. Latest acquisitions are in 3s-2w, 3s-3w, 4s-2w and 4s-3w, part of this being a block held by The Ohio Oil Company in 1932 and 1933.

W. N. Vaughey, of Houston, is assembling a block of 6000 acres in Clarke County, near Salipta in 8n-2e. Reports are current that a test will be drilled soon in Pickens County, Alabama.

Georgia Resources, Inc., was shut down at 1500 feet waiting on casing to shut off water in Gillican 1, Land Lot 200, Land District 12, Clinch County, Georgia, 12 miles south of Homerville. The formation at 1500 feet was identified as Claiborne.

Rocky Mountain Area

Confirmation Shannon Test Nearing Objective Sand

A number of important Wyoming tests were at critical depth as the week closed. General Petroleum Corporation's Government 31-21, CNW NE NW 21-35n-77w, east offset to the Shannon discovery well in the Cole Creek field, Natrona County, 13 miles northeast of Casper checked higher than the initial well and was coring into the objective sand. The 7-inch casing was set on top of the Shannon at 4520 feet. In the discovery, the Shannon was logged at 4530-70 feet. The company has located a third Shannon well on the federal lease, an east offset to the near completion. Location is CNW NW NE 21-35n-77w. The company plans drilling the north line of 40-acre tracts in Section 21 to give a cross section of core information to determine sub-surface features of the structure and check with the seismograph work done in determining structural outlines. Prior to development of Shannon production in plugging back from the deep test to the Dakota-Lakota, the company had planned a core drilling program for the same information.

On the North Geary structure west and south of Cole Creek, the Continental Oil Company's McGrath 1, CNW SW 15-34n-78w, Natrona County, bailed 6 barrels of oil and 26 barrels of water in 24 hours from the Dakota sand trough perforated 4¾-inch liner set at 6390 feet. Well is plugging back for a test of the Third Wall Creek sand at 5620-80 feet.

Sinclair Wyoming Oil Company's Unit 12, CSE NW 23-32n-95w, 3/8-mile beyond gas production in the Sand Draw field, had excellent showings of gas in the Frontier formation. Hole was bottomed at 3832 feet in the Wall Creek, and the 7-inch casing was set at 3818 feet. Operators will perforate pipe to test gas production in the Wall Creek sands of the Frontier. The field is in Fremont County, south central Wyoming.

Sinclair-Wyoming Oil Company's Wertz Unit 14, NW SW NE 7-2[illegible]-89w, Wertz field extension in Carbon County, Wyoming, was nearing objective formation in the Tensleep, drilling at 4896 feet.

North extension test to the Frannie field, Park County, northern Wyoming, the Minnelusa Oil Corporation's Roney 1, SW SW NW 24-58n-98w, was a failure, picking up no oil or gas shows on drilling through the Embar formation to 3458 feet. In the Oregon Basin field, Yale Petroleum Corporation was moving rotary for Frisby 1-B, CSW NE NE 31-52n-100w, after completing a 750-barrel well on the Owens lease.

West extension test to the LaBarge field, Worth Garretson's Fee 1, NE NW SE 28-27n-113w, Sublette County, southwestern Wyoming, was shut down at 1407 feet, a few hundred feet off objective sands, to move in heavier drilling equipment.

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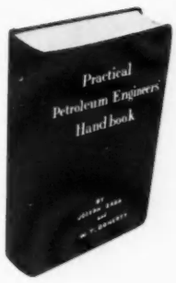

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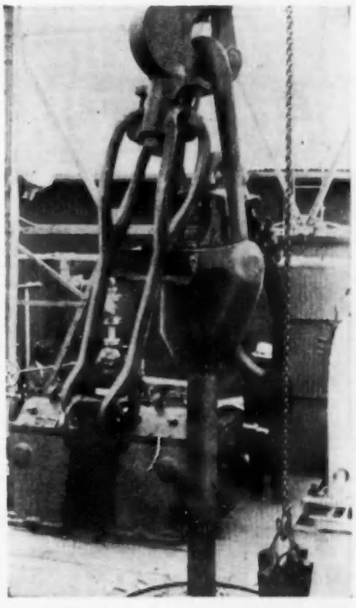

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this week in the Hiawatha gas field, Moffat County, northwestern Colorado. Although a number of old gas wells in the field have been going to oil in the past several years, completion of Mountain Fuel Supply Company's Florence Wilson 5, SW SW NW 23-12n-100w, for 281 barrels initial from three sands in the Wasatch marks the first well in the field to complete initially for oil. Total depth is 2565 feet, with oil production coming through perforations in 7-inch casing.

New Mexico

Four Lea County Fields Report Nine New Operations

Four Lea County fields accounted for 9 new tests the past week, including two offsets to a projected oil test that developed prolific flow of gas from the upper lime in the Toby pool. Vacuum field maintained its active position with 4 authorizations, involving nominal outposts. Magnolia Petroleum Company is seeking to advance production to the northwest with a pair of locations, while The Texas Company is starting work on State 2-U and 2-W, southwest and northeast extensions, respectively.

Continental Oil Company et al's Vaughn 1-B-12, C SE NE 12-24s-36e, north offset to oil production in the Toby pool, cemented an intermediate protection string of 7-inch pipe at 2756 feet after mudding off 50,000,000-foot flow of dry gas at 2828-2905 feet. Drilling was underway at 3110 feet. Operations have been started by Culbertson & Irwin, Inc.'s Cooper 1, a west offset, while Stanolind Oil & Gas Company's Meyers 6-B is an east offset.

The Arrowhead pool contributed another large well when Continental Oil Company's State 8-J, C E½ SE NW 2-22s-36e, flowed 102 barrels of 35-gravity oil natural per hour through ¾-inch choke from lime at 3740-94 feet. This west edge producer was completed within 24 days after spudding. Gulf Oil Corporation's State-Leonard 3-C has started up as an east offset to its State-Ramsey 6, which recently extended production to the north with natural flow of 300 barrels of oil in 6 hours from pay at 3760-3850 feet. The latter logged salt at 1379-2570 feet and top of brown lime at 3063 feet, with an elevation of 3555 feet.

Maintaining a continuous development schedule in the Maljamar field, Barney Cockburn spudded Baish 16-B and rigged up for Baish 17-B, both in 28-17s-34e. The entire section appears to be proved for production.

Michigan

Gladwin County Test Gives Company Third Pool for Year

Sun Oil Company, most aggressive major wildcatter this year and leading acreage holder in the state, had its third 1940 discovery completed last week, and while it was no gusher, it appeared to have greater possibilities than the first two.

The company's Cameron 1, Section 10-18n-2w, Grout Township, Gladwin County, 6 miles west of the Buckeye field, is about an 18-barrel pumper after acid treatment. It pumped off in 21 hours for 30 barrels net on the first test, after acid, and pumped 18 barrels on the two following days. Production is from Dundee lime at 3838 feet, and the well had 900 feet of oil natural. Sun Oil Company staked a 20-acre south offset, and was reported to have made a second location ¾ mile west. Excepting a few scattered small leases, the company has the area blocked from ½ to 2 miles from the discovery.

The third potential pool opener for Allegan County this month loomed when Fortney Oil Company's Minegar 1, NE SW SE 24-3n-14w, Heath Township, filled up 300 feet with oil from Traverse lime at 1519-22 feet. The test which will be tubed and acidized this week, is 3 miles southeast of the North Heath-Overisel pool and the same distance southwest of the Diamond Springs pool.

Efforts to get Teater & Markles' Johnston 1, Section 8-17n-14e, Huron County wildcat, on production through a series of acid treatments had not been successful. The Monroe-lime pay at 2652 feet appeared either too thin or too hard to take the acid. Treaters were unable to apply pressures of more than 800 pounds for fear of blowing out the casing seat on the 5-inch, which was mudded. Operators continued to work the test.

Muskegon Development Company is abandoning Doll 1, Section 8-9n-14w, Muskegon County, at 2549 feet, the shallow Berea sand gas discovery of the Ravenna field, which was deepened for a Dundee-Monroe lime oil test.

Only one test was left drilling last week in the Holland, Ottawa County, play, as two more tests were abandoned in the unsuccessful attempts to define a field. The Holland play was opened two months ago when Crown Development Company's Reimold 3, Section 34-5n-15w, flowed 200 barrels a day natural from Traverse. No other commercial test has been drilled.

California

Kern County Wildcat Starts at 350 Barrels

Republic Petroleum Company's wildcat in Section 18-32-23, Midway-Sunset district, Kern County, was completed as a pumper, gauging in excess of 350 barrels a day with about 300,000 cubic feet of gas. Geological indications point to a relatively small structure, embracing possibly not more than 100 acres. In the well, 50 feet of an aggregate 150 feet of sands were tested.

The Pure Oil Company's outpost to the East Coalinga district, Schwinn Estate 44-30B, Section 30-19-16, bottomed at 8300 feet with oil sand topped at 8165 feet, flowed to sump at an estimated rate of several thousands barrels daily of 27-gravity oil and approximately 1,000,000 cubic feet of gas. The well apparently extends the Coalinga Nose field two miles north.

The Texas Company started Bishop No. 1-A, wildcat in Section 13-4-29, Goleta area, Santa Barbara County. The test was prompted by surveys that indicate the presence of a structure similar to that at Ellwood Terrace, a highly productive light-gravity field not far distant.

Universal Consolidated Oil Company completed a large well on the extreme southwest edge of the Coalinga Nose field. Binkley 3, Section 24-20-15, flowed at an initial rate of 2400 barrels a day of 30-gravity clean oil. Bottom is at 7844 feet.

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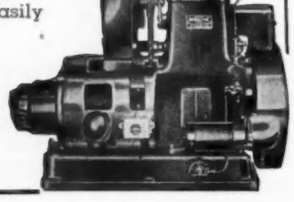

WITTE ENGINE WORKS
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UNITED STATES WELL COMPLETIONS

Arkansas

Union County (Urbana)—
Marine Oil Co., Thompson B-5, 3-18-13 ..... 100 3573

Alabama

Greene County (Wildcat)—
L. M. Glasco, Willis 1, 11-20n-1e... * 2615

Choctaw County (Wildcat)—
Union Prod. Co., McCorvey 1, 20-9n-2w ..... * 9622

California

Fresno County (Coalinga northeast)—
Standard, 82-19B 3524 8245

Fresno County (East Coalinga)—
R. S. Lytle 77-18F.....No Est. 7900
Standard, No. 88-13C.....4000 7820

Kern County (Midway area)—
Republic Pet. Co., No. 1..... 150 2465

Kern County (Trico area)—
Trico O. & G. Co., Newland 3..... ¶44 2464

Kern County (Canal)—
Ohio, KCL E-19.....No Est. 8306

Kern County (Kern River)—
Kern Hills Oil Co., Brown 1..... 4 442

Kern County (Ten Section)—
Shell, KCL A-87-29.....2100 8220

Kern County (Pyramid Hills area)—
Tide Water Associated, Pyramid 1. * 1038

Los Angeles County (East Coyote)—
Bartholomae Oil Corp., Stern 9.... 475 6500

Los Angeles County (Dominguez)—
Shell, Reyes 5..... 350 4400

Los Angeles County (Montebello West)—
Montabello Wesco, Montebello No. 1 490 7787
Standard, Braun No. 8..... 925 7790

Los Angeles County (Wilmington)—
Coast Line Oil Co., 1..... 239 3708
Royalty Serv. Corp., Packard 20-8-1 285 3610
Union Pacific, UP LB E-25.....1161 4037

Santa Barbara County (Gato Ridge)—
Petrol Corp., Tognazzini 3-15..... 600 2900

Santa Barbara County (Santa Maria Old)—
Union, Squires 22..... 30 3785

Santa Barbara County (Santa Barbara Mesa)—
Transoceanic, M'divani 5..... * 2020

Ventura County (Shiells Canyon)—
Santa Clara Pet. Corp., Santa Clara 1..... 90 3245

Illinois

Clark County—
Harry Dunn et al, Metzgar 1, c ne ne 7-9n-12w ..... * 1460
Allen & Sherritt, Biggs 1, nw nw sw 9-11n-14w 11 2450

Clay County—
Kingwood, Nell 1, se sw nw 14-2n-7e * 3207
Pure, Moseley 2, cw½ sw nw 3-2n-8e 98 3003

Clinton County—
Bert Fields, Buehler 1, sw c se sw 1-1n-1w 2208 2916
Koelmel 1, sec sw sw 1-1n-1w...1383 2918
Buehler 2, nec nw nw 12-1n-1w..1074 2918
Francois 1, nw se nw sw 12-1n-1w 949 2920
Gulf el al, Beuhler Comm. 2, cw½ nw sw 1-1n-1w 6428 2885
Gulf, Adams et al 1, ce½ se se 2-1n-1w 3995 2902
Adams-Schmitz 1, e½ se ne 2-1n-1w 5197 2897
Beuhler 23, sw se nw sw 12-1n-1w 196 2925
T. W. Lee, Hanseman 2, sw ne sw se 1-1n-1w 724 2914
Samedan, Brough-Hanseman 1, ne sw sw ne 1-1n-1w.....1711 2894
Shell & Adams, Felton-Lippert 3, w½ se nw 1-1n-1w.....2505 2874
Shell, Geary-Criley 3, se ne ne ne 2-1n-1w 5835 2885
Dunbar 2, se ne sw nw 12-1n-1w.3179 2917
Criley 11, cw½ se se 35-2n-1w..11,064 7380
Criley 12, ce½ se se 35-2n-1w...8112 2904
H. Sims, Ellerman 1, nwc sw ne 1-1n-1w 3509 2887
Taylor Dr. Co., Felton 1-A, cw½ nw nw 2921 2893
Amundsen, Allison 2, nw ne ne ne 12-1n-1w ..... * 2957
Hughes Pet. Co., Allison 2, se ne se ne 12-1n-1w..... 244 2933
Walker et al, Rettinghouse 1, lot 22, blk 4, 12-1n-1w..... 105 2921
V. Nettel, Wiggin 1, nec nw ne 24-1n-1w 166 2927
Pray, Knolhoff 1, nw nw ne 11-1n-2w 70 1328
Oil Producers, Inc., Vanderloo 1, nw ne ne 8-1n-3w 100 2530
Adams O. & G. Co., Copple 12, nw sw se 35-2n-1w 30 1367
Copple 13-D, e½ nw se 35-2n-1w.4040 2903

Crawford County—
Bell Bros., Wampler 1, e½ se sw 1-5n-12w ..... * 3110

Fayette County—
Seaboard, Tremblay 1, nw se se 22-5n-3w ..... * 2372
Texas, Chrisman 4, se ne sw 30-6n-3e 245 1574
Zephyr, Smith 9, ne sw sw 31-6n-3e 240 1618
Carter, McClain 12, nw nw nw 4-7n-3e 696 1587
Kimbrell 1, sw nw nw 17-7n-3e.. 168 1578
Wright 12, se nw se 20-8n-3e..... 108 1540
Grubaugh 2, se ne se 23-8n-3e... 546 1468
Logue 3, ne se sw 23-8n-3e..... 126 1471
Rhodes 3, ne nw nw 26-8n-3e... 36 1610
Vandenbark, Griffith 2, sw nw sw se 17-7n-3e 99 1542
Stewart, Rhodes 2, ne nw sw 26-8n-3e ..... * 1613
Gordon 3, nw sw se 35-9n-3e.... 55 1545
Gordon 4, ne se se 35-9n-3e..... 60 1548

Hamilton County—
Shell, Beagle 1, nwc sw se 6-6s-7e.. 220 2692
Carter, Pool 8, ne ne ne 25-6s-8e.. 75 2555
Exchange & Ohio, Rudolph 6, sw sw sw 12-6s-9e 177 2284
Exchange Oil, Storms 10, ne ne nw 14-6s-9e 175 2271
Eason Oil, Storms 3, nw ne se 15-6s-9e ..... * 2276

Jasper County—
Pure, Boos Cons 1, ce½ se sw 28-6n-10e 26 2788

Jefferson County—
Gibson & Jennings, Hall 2, nec se nw 36-2s-1e ..... * 2105
H. Hubbard, Bernreuter 1, se sw nw 14-3s-3w ..... * 1272
Leo Horton et al, Bielatowiez, sw se ne 22-3s-3w 30 1294

Marion County—
Texas, Lankford 9, 4-1n-2e..... 147 2095
City of Centralia 56, sec nw ne 5-1n-2e 1784 3445
Hawthorne 27, sw nw sw se 5-1n-2e 335 3462
Reed 7, sec ne nw 5-1n-2e..... 683 3380
Richardson 14, nec se nw 5-1n-2e 559 3400
Johnson 16, nw nw se 6-1n-2e... 812 1870
Friedrich 15, nw sw ne nw 7-1n-2e 210 2080
Fyke 16, nw se sw 8-1n-2e..... 245 2122
Hawkins Comm. 6, cn½ se nw 8-1n-2e 161 2085
Fyke 7, nwc ne 17-1n-2e..... 140 2125
Hamlin 5, ne nw ne 4-2n-2e..... 147 2070
Sweney 9, se nw nw 20-2n-2e... 27 3511
Friedrich 22, nw nw nw 29-2n-2e 502 3528

[*Continued on next page*]

Summary of Drilling Operations in the United States, Week Ended June 29, 1940

	WELLS COMPLETED							*PERMITS FOR NEW WELLS				
	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1940	Total this Date 1939	This Week	Total this Month	Total 1940	Total this Date 1939	Year Total 1939
Alabama	2	.....	.....	2	.....	3	1	.....	.....	.....	.....	.....
Arizona	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas	1	1	.....	.....	100	95	113	4	12	72	114	223
California	20	17	1	2	14,441	666	526	25	74	556	507	1,174
Colorado	.....	.....	.....	.....	.....	3	11	.....	.....	.....	.....	.....
Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Georgia	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Illinois*	104	87	.....	17	92.574	1,896	1,834	75	411	2,182	.....	893
Indiana	10	6	.....	4	933	208	84	.....	.....	.....	.....	.....
Kansas	51	38	.....	13	56.842	939	660	36	1,30§	987	750	1,583
Kentucky	14	3	.....	11	212	160	304	.....	.....	.....	.....	.....
Louisiana	37	29	1	7	4,752	842	508	28	130	838	622	1,449
Michigan	23	13	1	9	1,655	636	694	22	92	593	669	1,419
Mississippi	5	1	.....	4	480	100	4	.....	.....	.....	.....	.....
Missouri	.....	.....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....
Montana	9	5	1	3	125	88	58	.....	.....	.....	.....	.....
Nebraska	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Mexico*	12	9	.....	3	4,362	369	315	7	31	339	.....	293
New York	21†	21†	.....	.....	.....	523	243	.....	.....	.....	.....	.....
North Dakota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ohio	‡	.....	.....	.....	.....	.....	433	.....	.....	.....	.....	.....
Oklahoma	53	28	9	16	5,868	1,114	1,041	17	105	943	1,046	2,059
Pennsylvania	39†	38†	1	.....	31	1,294	673	.....	.....	.....	.....	.....
South Dakota	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Tennessee	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....
Texas	202	155	7	40	73,634	5,370	4,907	146	733	6,176	5,388	10,269
Utah	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
West Virginia	‡	.....	.....	.....	.....	.....	237	.....	68	190	291	718
Wyoming	4	4	.....	.....	1,476	67	65	.....	.....	1	.....	.....
Total this week	607	455	21	131	257,485	15,009	12,712	360	1,786	12,877	9,387	20,075
Total last week	645	477	31	137	306,178	14,402	12,146	479	1,426	12,517	9,045	20,075
Total this year	15,009	11,018	797	3,194	5,799,964	.....	.....	.....	.....	.....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Illinois date from October 15, 1939; New Mexico from August 1, 1939.
† Includes water-input wells.
‡ Ohio and West Virginia not available for week of June 29, 1940.
§ Figures for Kansas for week of June 8, not available.

United States Well Completions—*Continued*

Company, Well and Location	Init. Prod. Bbls.	Depth
Maxwell 1, se nw ne se 30-2n-2e	1173	3465
Stroup 22, sec sw sw 30-2n-2e	1401	3504
Stroup 15, nec nw nw 31-2n-2e	1662	3507
City of Centralia 44, se ne se sw 33-2n-2e	2500	3510
Farthing 9, nec sw 33-2n-2e	1602	3537
Farthing 10, ne sw ne sw 33-2n-2e	1650	3521
W. C. McBride, Fyke Hrs. 1, sw nw sw se 5-1n-2e	280	1869
Magnolia, Chitwood 53, se ne sw 16-2n-2e	816	3516
Chitwood 51, sw se ne sw 28-2n-2e	227	3483
J. H. Young 108, sw se se nw 28-2n-2e	768	3476
J. H. Young 109, ne sw se nw 28-2n-2e	520	3505
Sheppard, Grier 5, ne sw ne sw 30-2n-2e	1160	3533
Ohio, Young Hrs. 48, se sw sw sw 20-2n-2e	228	3533
Loyd 32, nw se 28-2n-2e	10	2082
Harvey, Kagey 9, ne sw se se 33-3n-2e	125	2040
Kagey 10, sw ne sw se 33-3n-2e	120	2155
Absher & Booth, McMackin 2, se nw sw sw 34-3n-2e	80	2042
McMackin 3, swc sw 34-3n-2e	75	2040
Richland County—		
Robinson et al, Denner 1, ne ne se 26-2n-10e	*	3326
Pure, Coen 5, cw½ se se 36-5n-9	*	2790
Billings 2, ce½ ne se 31-5n-10e	157	2850
Wabash County—		
Bander et al, Summers 1, se nw nw 3-1n-13w	*	2722
Seibert 3, se ne ne 4-1n-13w	75	2700
Big Chief Dr. Co., Summers 2, ne nw nw 3-1n-13w	60	2698
Hupp et al, Cox 1, nw ne nw 3-1n-13w	100	2724
Big Chief & Mohawk, Seibert 1, sw se sw 34-2n-13w	539	2724
Burr Lambert, Sieler 1, se se se 27-1s-13w	192	2626
Wayne County—		
Pure, Bates 1, ce½ ne ne 8-1n-8e	765	3096
Staley Oil Co. 1, cn½ se se 24-2n-7e	14	3104
Zimmerman 1, cn½ se ne 25-2n-7e	35	3092
Burton 1, e½ se nw 3-1s-7e	*	3173
Oil Well Dr. Co., Lawrence 1, nw ne sw se 34-1s-7e	730	3275
Texas, Boggs 5, ce½ nw se 8-3s-7e	62	3360
Lessing Aich, Dickey 1, cs½ se ne 3-1s-6e	10	3300
White County—		
Nation Oil Co., McIntosh 1, se nw nw 31-3s-8	*	3390
Bay Oil Co., Vanpel 1, se ne nw 2-4s-9e	*	3400
Sun, Brown 2, cn½ ne sw 2-4s-9e	750	3373
Williamson County—		
Carterville O. & G., Cannon 1, nw se sw 1-10s-1e	*	2045
Nation Oil, Coleman 1, nw sw sw 1-10s-1e	*	2020

Indiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Gibson County—		
A. L. Braden et al, Knight 1, ne se sw sw 2-2s-11w	*	2208
Lewis Prod. Co., Cooper 9, se ne nw 13-3s-14w	60	2520
Cooper 8, ne se nw 13-3s-14w	147	2500
Papoose Oil Co., Cooper 6, nw nw sw 13-3s-14w	60	2520
Hall Edwards, Rec., Maire 1, se se se 14-3s-14w	424	2491
Pike County—		
K. T. & F. Oil & Dev. Co., Schoultz 1, ne ne se 18-1s-9w	*	1262
Porter County—		
Dail Goodson, Pluta 1, nw se se 23-37n-5w	*	1150
Posey County—		
Ray Ryan et al, Keck 1, nw se nw 34-3s-14w	212	2813
Somers & Egan, Keck 4, sw nw nw ne 34-3s-14w	30	2808
Superior Oil, New Harmony Realty Corp. 26, nw nw sw 17-5s-14w	*	3091

Kansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton County—		
Cities Service, Bauman 3, csl se ne sw 6-16-13w	3000	3351
Phillips, Bitter 6, sw ne sw ne 6-16-13w	3000	3344
I. T. I. O., Hoffman "A" 6, cn½ se ne 1-16-14w	1384	3322
Shell, Ehrlich "B" 7, nw se nw sw 1-16-14w	146	3306
Crown, Schartz 2, ce½ ne nw 7-20-11w	466	3352
Butler County—		
Shawver, Cameron 1, cel se nw sw 2-25-5e	40	2226
Cromwell, et al, Clark 1, nw nec 3-28-5e	38	3086
Cowley County—		
Shawver, Davis 2, sw nw ne 21-30-4e	*	3252
Hawkeye, Hittle 7, ne sw ne 21-34-4e	8055	3321
Ellis County—		
Dickey, Henderson "B" 3, se sw sw 6-11-17w	385	3514
Lario, Pearl 4, ce½ sw se 13-11-17w	3000	3378
Cities Service, Collahan 13, ce½ nw ne 24-11-17w	3000	3387
Phillips, Peavey 4, cn½ nw se 13-11-18w	3000	3387
Central Petroleum, Marshall 1, cn½ nw nw 24-11-18w	*	3648
Ellsworth County—		
Atlantic, Stoltenberg "A" 1, cn½ ne se 27-16-10w	3000	3298
Murfin et al, Lille 1, cs½ se ne 30-16-10w	*	3406
Lario, Mehl 2, cs½ se se 35-16-10w	3000	3286
Graham County—		
Continental et al, Desaire 1, csl sw nw ne 10-9-21w	*	3743
Greenwood County—		
Barbara O. & G. Co., Schneider 23, nw sw nw nw 10-23-13e	*	1778
Reed et al, Dove 2, sw nw ne ne 17-28-11e	25	1222
Whittaker et al, Adams 1, nw ne sw ne 17-28-11e	30	1120
Kingman County—		
Gaddis et al, Shannon 1, ce½ se sw 11-27-10w	*	4315
Marion County—		
Phillips, Bevan 3, sw nw se 21-17-4e	152	2399
McPherson County—		
Westgate-Greenland, Henne 4, ce½ sw se 18-17-1w	327	2681
Cities Service, Pearson 3, cs½ sw se 19-20-5w	3000	3337
Republic Natural, Mattson 4, cn½ nw sw 19-20-5w	1015	3350
Crosbie, Briggs 1, cw½ se sw 20-20-5w	520	3379
Bradley Bros., et al, Mattson 3, cw½ ne ne 20-20-5w	3000	3336
Pawnee County—		
British American, Belt 2, cw½ se nw 13-20-16w	87	3832
Rice County—		
McPherson Drlg. Co., Cramm "C" 1, cs½ ne sw 10-19-9w	*	3363
Hartman et al, Kidd 2, cn½ se se 12-20-6w	432	3365
Carlock et al, Conrad 1, cw½ sw ne 15-20-6w	*	3390
Pulse et al, Baker 1, cs½ sw sw 33-20-6w	*	3508
Continental et al, Carlson 2, cwl nw se ne 36-20-6w	346	3350
Vickers, Scott "B" 1, cs½ nw ne 20-20-10w	159	3322
Eldorado Refg. Co., Oden 1, nec nw 6-21-7w	*	3354
Rooks County—		
Cities Service, Hansen 1, sec nw 15-6-19w	*	3700
Russell County—		
Simpson et al, Rusch 1, cw½ nw sw 33-14-14w (OTD 3230)	*	3287
Skelly, Phinney 1, se nw ne nw 30-14-13w	1183	2897
Mid-Continent, Rogg 3, cn½ sw ne 32-14-13w	1347	2875
Texon, Hall "A," cw½ nw ne 35-14-13w	609	2859
Stanolind, Boxberger 5, cel se nw sw 14-14-14w	1387	3070
Rosener 9, cn½ ne sw 9-15-13w	549	3334
Eldorado Ref. Co., Kuhnle 1, cs½ ne nw 4-15-12w	583	3212
Shields, Gross "A" 1, cs½ se sw 5-15-13w	*	3206
Southern, Hinderliter "A" 1, cw½ nw sw 28-15-13w	3000	3345
Cities Service, Eichman "A" 3, cw½ nw se 12-15-14w	1928	3102
Podszus 8, cn½ nw sw 25-15-14w	219	3320
Shell, Batt "A" 3, se ne se 35-15-14w	3000	3337
Coralena, Dumler 11, swc nw 36-15-14w	720	3330
Stafford County—		
Stanolind, Hitz 5, ce½ sw nw 2-22-12w	1710	3587

Kentucky

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
Miller & Shiarella, Moore & Heltsley 1	*	536
Daviess County—		
Andrew Teller, Lebold 3	198	1292
Cameron & Hupp, Aiken 3	*	1299
White & Vickers, Holbrook 1	*	610
Hancock County—		
W. J. Flescher et al, Sanders 4	8	526
Mineral Reserve 17	*	725
Breckinridge O. & G., Keown 1	*	365
Garland & Handerson, Jackson 1	*	621
Henderson County—		
Boyce, Walker 1	*	765
Ohio County—		
Oliver Jenkins et al, Royal Hrs. 3	*	406
Joe May et al, Renfrow 1	*	380
J. W. Tuttle et al, Wimsatt 5	6	215
Rex-Pyramid Oil Co., Blare 3	*	1041
Dr. Clark, Fentress 1	*	540

North Louisiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo Parish (Pine Island)—		
W. F. Bridewell, Stiles 1, 21-21n-16w	30	2400
R. W. Williams, Arkansas Fuel 4, 25-21n-16w	*	2290
Sklar Oil Co., Cheshire 2, 32-21n-15w	30	1597
Texas Co., A. Herndon 12, 14-21n-15w	130	1669
Louisiana Co. Fee 7, 1-20n-16w	10	1672
L. O. Gandy, Etchison 2, 11-20n-16w	100	1525
Magnolia Pet. Co., Doan-Thigpen 22, 6-20n-15w	75	1515
McDonald & Campbell, Youree 15, 13-20n-15w	25	2270
La Salle Parish (Olla)—		
Arkansas Fuel Oil Co., Goodpine A-2, 7-10n-3e	150	2238
Placid Oil Co., Goodpine 6, 18-10n-3e	65	2428
Morehouse Parish (Monroe)—		
Southern Carbon Co., Tensas Delta 31, 2-21n-4e	¶2.0	2225
Sabine Parish (Converse)—		
George L. Pace, Logan Oil Co. 5, 26-10n-13w	5	1970

South Louisiana

Company, Well and Location	Init. Prod. Bbls.	Depth
Anse La Butte—		
Rice, Dupuis 1	333	4660
Bay St. Elaine—		
Texas, State 2	160	6972
Caillou Island—		
Texas, State 68	194	5208
Cameron Meadows—		
Burton-Sutton, School Land 5	127	6433
Chalkley—		
Humble, Hanszen 9	2	8805
Charenton—		
Hammill-Smith, De Arman, Allemands 10	97	857
Chaneyville—		
Amerada, Well 10	212	5755
Richardson, Well 13	*	8231
Darrow—		
Humble, Community 29	535	4758
Eola—		
Amerada, Dent-Martin 1	213	8573
Continental, Fontenot 1	75	10,150
Garden Island Bay—		
Texas, State 45	350	6197
Golden Meadows—		
Bennett, Gilbeau 2	115	2670
Berkshire, Nicol 1	420	10,078
Grand Lake—		
Superior, State 13	355	8990
Jeanerette—		
Herton, Roane 7	*	2591
Jefferson Island—		
Texas, Salt Mines 5	360	7890
State 3	*	8459
Lake Mongoulou—		
Texas, State 8	72	10,788
North Crowley—		
Humble, Quebedeaux 1	*	9634
Ville Platte—		
Continental, Tate 4	224	10,308
Woodlawn—		
Union Sulphur, Johnson 3	270	8115
Acadia Parish—		
Vincent & Welsh and E. J. Nicklos, McManus 1, Trilby area	18	3537
Assumption Parish—		
Shell, Tatteran Community 1, Amelia prospect	*	11,278
Iberia Parish—		
I. Delcambre, Reynaud 1, Delcambre area	*	696

Montana

Company, Well and Location	Init. Prod. Bbls.	Depth
Fergus County (Winnifred)—		
Emmons et al, No. 3, w nw nw 5-21n-18e	¶.25	485
Glacier County (Cut Bank)—		
Annand & Hutchings, Federal Land Bank 5, csl n sw 11-34n-5w	15	2908
Santa Rita O. & G. Co., Whetstone 6, se ne 27-35n-6w	*	2925
Tarrant, Pardee et al, Corrigeaux 2, se ne ne 2-33n-6w	*	2985
Texas Co., State 5 M455, cne ne 16-32n-5w	15	2971
Unit 2, cse nw 11-35n-6w	45	3008
Toole County (Kevin-Sunburst)—		
Adams-Hessla, MacManus 6, cse se 21-35n-2w	25	1440
Imperial-Craig, Gauss 2, cse nw 18-35n-1w	*	1702
Rimrock Oil Co., Schmidt 6, sw ne nw 29-35n-3w	25	1798

Missouri

Company, Well and Location	Init. Prod. Bbls.	Depth
Mercer County—		
Moore et al, Moss 1, nw sw se 30-65n-24w	*	2330
Platte County—		
Roach-Vincent et al, Dillingham 1, cnl ne sw 16-53n-34w	*	1485

*Failures; †Junked; ¶Million cu. ft. gas.

United States Well Completions—*Continued*

Michigan

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Bridger Basin Oil Corp., Nevenzel 2, sw ne sw 3-3n-14w	180	1559
W. Spencer Cook, Schaap B 1, nw sw nw 3-3n-14w	129	1465
Brailey Oil Snyd., Stankey 1, nw se se 4-3n-14w	400	1438
Frank S. Vahue, Klein 3, ce½ w½ 10-3n-14w	*	1560
Arenac County—		
Don Rayburn, Milne 1, sw sw se 23-19n-3e	400	2066
Clare County—		
American Prod. Co., Mercier 1, c nw 27-18n-5w	¶.25	1556
Gladwin County—		
Sun, Cameron 1, ce½ ne se, 10-18n-2w	18	3838
Kent County—		
R. E. King, Burgess 1, nw ne ne 32-7n-12w	144	1907
Certain-Teed Prod. Co., Fee 19, sw nw sw 34-7n-12w	40	1816
Midland County—		
C. L. Maguire, Clark 1, se se se 32-16n-2w	*	5117
Muskegon County—		
Muskegon Dev. Co., Doll 1, sw nw se 8-9n-14w	*	2549
Ottawa County—		
Crown Dev. Co., Reimold 3, nw sw ne 34-5n-15w	*	2455
Voorhees Dr. Co., Petroelje 1, nw sw nw 36-5n-15w	*	1504
Gordon & Bolgers, Daling 1, sw sw se 14-7n-13w	80	1860
Ostenson 1, sw nw se 14-7n-13w	84	1862
Wolverine Nat. Gas. Corp., Haga 1, se nw sw 14-7n-13w	35	1875
Mesel & Spielbergs, Lipski 3, ne ne sw 14-7n-13w	15	1879
Geo. L. Kernodle, Masterson 1, se sw se 23-7n-13w	50	1869
Tuscola County—		
James Blackmer, Prime 1, c s ne nw 19-14n-8e	*	3550
Van Buren County—		
Gratiot O. & G. Co., Drake 2, ne ne sw 21-2s-16w	80	997
Shelbow Oil Co., Jackson A1, ne nw ne 29-2s-16w	*	1226
Brown, Down et al, Brown 1, sw sw ne 30-2s-16w	*	995
Wexford County—		
Kirkham et al, Whaley 1, sw se se 24-21n-9w	*	4047

Mississippi

Company, Well and Location	Init. Prod. Bbls.	Depth
Holmes County (Wildcats)—		
Exchange Oil Co., Gwin 1, 6-16n-1e.	*	5099
A. H. Rowan, Eakin 1, 20-14n-1e..	*	6013
Scott County (Wildcat)—		
Exchange Oil, Newell Mineral Lease A-1, 30-7n-7e	*	6500
Yazoo County (Wildcat)—		
Sells Pet. Co., Faulkner 1, 34-9n-4w	*	6500
Yazoo County (Tinsley Dome)—		
Union Prod. Co., Stevens 11, 12-10n-3w	480	4917

New York

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
R. B. Moore et al, Curtiss farm, Bolivar	9	1160
Shaner & Co., Welch farm, Bolivar.	6	1429
Messer Oil Corp., Shaner farm, Bolivar	9	1412
Richardson Oil Corp., Towner farm, Scio	5	1129
Bradley Prod. Corp., Monder farm, Alma	4	1265
Otsquago Oil Corp., Pike farm, Alma	8	1372
L. H. Thornton et al, Brown farm, Alma	8	1280
H. W. Patterson, Milks farm, Scio.	5	920
Smith & Gray, Gray farm, Genesee	2	1360
Water Intake Wells		
Forest Oil Co., Ackerman farm, Bolivar	...	1152
Moore & Repp, Hatch farm, Wirt..	...	1146
R. B. Moore No. 6 Daniels farm, Bolivar	...	1295
Vossler & Short et al, Quick farm, Alma	...	1530
N. V. V. Franchot, Reddy farm, Alma	...	1444
Brown & McEnroe, Bellamy farm, Alma	...	1170
Dick Oil Co., Cameron farm, Bolivar	...	1336
Pioneer Oil Co., Wood farm, Willing	...	1062
Stout Bros. Oil Co., Roeske farm, Wellsville	...	1330
Messer Oil Corp., Courtney Hollow farm, Genesee	...	1349
Courtney Hollow farm, Genesee..	...	1318
Sloan & Zook, McDivitt farm, Bolivar	...	1272

New Mexico

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Evarts Dr. Co., Grier 1, sec se 31-16s-31e	*	3854
Sallee & Yates, State 3, se ne ne 2-18s-29e	864	2671
J. H. Sikes et al, Iles 1, nec nw 20-16s-29e	...	....
Suppes Bros. et al, Miller 2, se ne ne 6-18s-29e	33	2715
Eddy County (Wildcat)—		
Frank Montgomery et al, Kaltenbach 1, nwc nw 24-16s-27e	*	2243
Lea County (Arrowhead)—		
Cities Service, State 3-N, ne nw sw 2-22s-36e	744	3820
Gulf, State-Ramsey 6, c se ne 35-21s-36e	1200	3850
Ohio, State-McDonald 19, nec se 13-22s-36e	336	3757
Lea County (Langlie)—		
Anderson-Prichard, Wells-Conoco 12, c w½ se nw 4-25s-37e	*	620
Lea County (Maljamar)—		
Maljamar O&G Corp., Balsh 2-B, c se sw 22-17s-32e	295	3978
Lea County (Vacuum)—		
Magnolia, State-Bridges 69, c sw nw 13-17s-34e	102	4670
Phillips, State-Santa Fe 40, c sw nw 35-17s-35e	648	4588
Shell, State 4-T, nw se se 33-17s-35e	140	4645

Oklahoma

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo County—		
Ohio, Marchand 3, se sw nw 2-5n-9w (OTD 5433)	504	6578
Pau-Kune 16, nw swc se 3-5n-9w.	1879	3432
Rawlins, Headlund 1, sw se ne 11-5n-9w	240	3895
Palmer, Ulery 3, se nw ne 34-6n-10w	984	3383
Carter County—		
Daube, Love-Johnson "B" 1, se ne ne 32-1s-3w	25	4150
McGraw, Smith 6, nec nw 5-4s-3w..	20	1085
Creek County—		
Tibbins, Harry 4, sw nw nw 9-14n-10e	125	3217
Martin et al, Darks 4, ne nw nw 28-14n-10e	150	2815
Sinclair-Prairie, Dacon 40, cnl se se 16-17n-7e	*	2832
Grady County—		
McCasland, Slusher 2, cn½ ne se 28-3n-5w	18	2536
Jackson County—		
Kerbow et al, Danona 3, sw ne nw 6-1s-19w	47	2641
Kriss et al, Inkleberger 1, se sw sw 3-1n-20w	5	1469
Navajo, Hensley 4, sec nw 10-1n-20w (OTD 1543)	18	1580
Burnham, Sumner 2, nw ne se 6-1s-19w (OTD 2560)	60	2600
Latimer County—		
Le Flore G. & Elec. Co., Orr 33, cne nw 9-6n-22e	¶0.5	1713
Logan County—		
Continental et al, Chitwood 1, nec sw 15-16n-4w	*	6698
Sinclair-Prairie, Smith 1, nw sw se 12-17n-1w (OTD 5170)	¶4.5	5170
Muskogee County—		
Garrett, Escoe 1, sw swc se 16-13n-17e	¶2.0	1660
Mussellem, Flusche 3, ce½ se ne 17-14-17e	72	1896
Okfuskee County—		
Fleming, McKinney 1, nw nw sw se 18-10n-11e	¶18.0	1500
Smith, Lovin 5-A, cs½ sw ne 26-11n-11e	*	2408
Sinclair-Prairie, Monarye 2, sw ne se 29-12n-10e (OTD 3142)	7½	3146
Oklahoma County—		
Ohio, Fortson 4, ne nw ne 24-11n-3w (OTD 6571)	¶2.1	4355
Phillips, Stiles 8, nw sw nw ne 34-12n-3w	986	6575
Okmulgee County—		
Lynn, Arnett 1, ne se nw nw 1-13n-12e	8	1701
Briscoe, Haynes 1, se se sw sw 36-14n-12e	7	1687
Kirkland, Green 4, nw ne se ne 24-15n-12e	20	1649
Osage County—		
Peters et al, 2, nec sw 4-23n-10e	*	2509
I. T. I. O., 470, ne nec sw 10-26n-11e	¶0.26	1883
Stevenson et al, 1, nwc 34-28n-10e.	¶3.0	1831
Payne County—		
Cities Service, Sinnett 1, sec 14-20n-4e	*	3969
Texas, Carr 2, cw½ nw ne 12-17n-1e	*	4928
Pawnee County—		
Judson et al, Finley 1, nwc se 5-20n-9e	¶5.3	1804
Bryan, Zackfoose 5, ce½ nw ne 23-20n-9e	*	1242
Pontotoc County—		
Amerada, Wooley 14, ne se nw 22-2n-7e (OTD 3916)	*	1315
Bray, Fee 1, nw se nw 25-5n-4e...	35	2643
Hall, Troup et al, Haskins 1, swc 26-5n-4e	250	2500
Yingling et al, Newborn 1, nwc se 31-5n-4e	¶11.2	2050
Pottawatomie County—		
Iglehart, Zoehler 1, sec ne 4-6n-5e (OTD 4122)	*	4108
Sinclair-Prairie, Blandon 2, sec sw 24-7n-4e (OTD 4276)	45	4296
Elko, Hulsey 2, se ne sw 26-7n-4e..	60	4375
Pioneer, Miller 1, nw ne ne 32-7n-4e	144	4283
Harwood, Riddle 1, sw se ne 29-7n-5e	*	4175
G. & M., Pierce 2, ne nw ne 6-10n-4e	80	4499
Sauter 1, nec nw 6-10n-4e	26	4512
Berry Bros., Evans 1, sec ne 17-10n-5e	*	4792
Seminole County—		
Gulf, Bourassa 3, sw se ne 7-8n-5e (OTD 4052)	10	4322
Atlantic, Fleet 4, se ne nw 23-8n-6e (OTD 4137)	42	4166
Singer et al, Cunsah 2, nwc ne 36-8n-7e (OTD 3089)	*	3372
Murta et al, Ashby 1, cw½ ne se 4-10n-6e	*	4269
Stephens County—		
Jackson Bros., Ketchum 1, se se ne ne 1-1s-6w	*	2575
McAlester, Wade "B" 4, se nw sw ne 11-2s-8w	*	2101
Tillman County—		
Gulf, Owen 1, nec 27-4s-15w	*	4232

Pennsylvania

BRADFORD DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
South Penn Oil Co., Rumsey	1	....
Penn Valley Crude Oil Corp., fee ..	2	....
Melvin & Towne Oil Co., fee	2	....
Bradford Transit Co., 17 wells	17	....
Forest Oil Corp.	1	....
Niagara Oil Corp., 5 wells	5	....
Water Intake Wells		
Duffytown Oil Co., M. J. Sullivan..	...	....
Forest Oil Corp.	...	....
Forest Petroleum Corp., 2 wells	...	....
Niagara Oil Corp., 6 wells	...	....

MIDDLE DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
S. H. Elder & Co., Elder	2	....
Water Intake Wells		

BUTLER-ARMSTRONG DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Peoples Natural Gas Co., Smith	¶	....
J. M. Hilliard et al, George Frishkorn	1	....

Texas Gulf Coast

Company, Well and Location	Init. Prod. Bbls.	Depth
Angleton—		
Sun, Stern 1	108	10,574
Barbers Hill—		
Texas Gulf, McLean 5	348	4213
Clear Lake—		
Humble, Martyn 1	486	5848
Dickinson—		
Atlantic, Anderson 1, (wo)	225	8098
Hilljc—		
Titantic, Carlson 1	55	5800
Joe's Lake—		
Republic & Houston, Hurd 37	456	4701
Martha—		
Stanolind, Simmons 1	abnd	lcn.
League City—		
Phillips, Ott 1	215	9821
Lovell's Lake—		
Shell, Nelson 3	161	7807
Magnet—		
Humble, Cockburn 5	455	5543
Old Ocean—		
Stanolind, Stevenson-Donovan 1	363	....
Segno—		
Williams & Weinert, Hooks 2	697	8094
South China—		
Titantic, Broussard 1-B	216	7915
Thompsons—		
Humble, Lockwood-Smith 47-A	*	5979
Gulf, Wolters B-16	532	5420
Quintana, Wolters Y-17	105	4350
Tomball—		
Humble, Stehly 1-B	150	5577
West Beaumont—		
Stanolind, Keith-Dowlen 10	129	5385
West Orange—		
Gulf, LaFour 5-B	589	5950
Willow Slough—		
Sun, Barrow 3	*	8912
Withers—		
Texas, Pierce C-73	112	5392
Calhoun County—		
Ranger and Crosby Dr. Co. Sells 1, Olivia area	*	9011
Chambers County—		
Sun, Smith 1, 3 mi north Seabreeze fld	150	8853

[*Continued on next page*]

United States Well Completions—*Continued*

TEXAS GULF COAST—Continued

Company, Well and Location	Init. Prod. Bbls.	Depth
Harris County—		
Mayo and Christian-Carpenter Dr. Co. Josey 1, Cypress area	*	7509
Montgomery County—		
Continental, Bender Est. 1, Spring area	*11,213	
Orange County—		
Texas, Stark 11, 1 mi west Port Neches fld	*	7560

West Central Texas

Brown County—		
Callahan & Harris, Cox-McGinnis 1	*	720
Wilson Oil Co., Bowden 1-A	5	2455
Windham et al, Cox 1	20	2383
Brown County (Wildcats)—		
H. T. B. Prod. Co., Smith 1	*	405
Stalcup et al, Morris 1	*	972
Coleman County—		
McKissick et al, Morris 1	126	3568
Morris 2	840	3582
Eastland County—		
Dobbs Oil Corp., Thomasson 1	234	2658
Jones County—		
Condor Pet. Co., Sayles 28	281	1931
G. Gaston et al, Wirt Davis 1	37	1713
J. C. Hunter et al, Bettis 1	25	3463
Lewis Prod. Co., Sayles 3-D	268	1923
W. H. Peckham et al, Brock 12	240	1894
Wichita Prod. Co., Daughtry 6	55	1907
Shackelford County—		
W. L. Baker et al, Ghio 4	6	601
Georgian Oil Corp., Blach 1 (pb to 3915 ft)	8	4825
Humble, McCown 2	1495	3186
B. Kidd et al, Clark 1	7	665
Roark et al, Hickman 7	40	669
Roeser-Pendleton, Inc., Cook 11-B-113	353	1591
Roeser-Pendleton-Conoco, Cook 9-A-113	106	1589
Stephens County—		
W. B. Omohundro et al, Dance 1-B	1320	3589

West Texas

Crane County (Gulf-McElroy)—		
Gulf, McElroy 219	618	2990
Crane County (Sand Hills)—		
Humble, Tubb 38	1283	4401
Ector County (Foster)—		
Atlantic Ref. Co., Henderson 12	623	4250
Humble, Henderson 1-B	1035	4190
Sinclair Prairie, Johnson 1-64	97	4247
Stanolind, Cowden 49-A	794	4105
Sunray Oil, Johnson 4-D	474	4150
Johnson-Landreth 1-G	372	4290
Ector County (Goldsmith)—		
Gulf, Goldsmith 287	583	4218
Goldsmith 288	1199	4208
Goldsmith 289	1353	4203
Goldsmith 290	440	4185
Ector County (North Cowden)—		
Rhodes-Tompkins et al, T. P. Land Trust 1-C	*	4336
Stanolind, Midland Farms Co. 2-B	1603	4634
Gaines County (Seminole)—		
Atlantic Ref. Co., Riley 7-B	908	5262
Magnolia & Atlantic, H. & J. 6-219	541	5252
Osage Dr. Co.-V. B. Likens, Tippett-Ohio 1-B	469	5322
Hockley County (Slaughter)—		
Awoeb Oil Co., Davis 5	1192	5018
Rowan Dr. Co., Mallet-Mid-Continent 1	460	5026
Stanolind, Slaughter 7-A	810	5025
Pecos County (Lehn)—		
W. E. Keeney et al, Lehn-Texaco 4	84	1758
Pecos County (Pecos Valley)—		
Claude Garrett, Bennett 1	*	1400
Pecos County (Taylor-Link)—		
H. G. Eastham et al, University 3-B	227	1628
Pecos County (Toburg)—		
A. J. Rife et al, Tippett-Conoco 13	26	481
Pecos County (Yates)—		
Ohio Oil, Yates 1-G-13	*	544
Scurry County (Sharon)—		
Helmerich & Payne, Martin 6	98	2485
F. W. Merrick, Westex Nat'l Bk 1	150	2437
Ward County—		
F. J. Downey et al, Burks-Cities Service 1	*	2748
Edwards-Moore & Donnelly, Reynolds 4	581	1882
Gulf, O'Brien 134	44	2652
Reese & Pittman, Texas Cotton Ind. 2	15	1978
Winkler County (Kermit)—		
Bates-Reading Oil Corp., McCabe-Shell 1	313	3020
Yoakum County (Wasson)—		
Aloco Oil Co., Smart-Texaco 8	557	5162
Anderson-Prichard Oil Corp., Willard-Gibson 4	920	5181
Honolulu Oil Corp., Hovencamp 5-890	1852	5100
Humble, Bennett 6	708	5235
Phillips Pet. Co., Dowden 3	619	5070
Shell Oil, Baumgart 13-A	1231	5165
Baumgart 15-A	1374	5195
Baumgart 16-C	1595	5184

Texas Panhandle

Carson County—		
Cities Service, Burnett 36-A	¶21.7	2544
Magnolia, Fee (Tr. 244) 80	3	3070
Fee (Tr. 244) 82	11	3145
Northern Nat. Gas Co., Fields 1	¶14.5	2905
Gray County—		
Magnolia, Fee (Tr. 227) 32	43	3072
Stanolind, Hood 9	182	3116
Hutchinson County—		
J. G. Burch et al, Weatherly 1	100	3090
Weatherly 2	100	3090
Skelly, Watkins 4-B	404	2855
Texas Co., Lewis 24	315	2980
Lewis 25	355	3010
Moore County—		
Phillips, Lovvorn 1	¶63	3475
Sinclair Prairie & Shell, Catlett 1	¶53	3218

North Texas

Archer County (Hull-Silk)—		
Dillard-White & Duncan, Nichols 7	1200	4409
Helmerich-Payne & Blackwell, Wilson 15	888	3870
Bert Ligon-Deep Oil Dev. Co., Wilson-McCrory 6	624	4346
Ed. Peterson & McCarty, Wilson 34-B	840	4328
Pet. Prod. & United Producers Co., Shephard 5	768	4334
Phillips, Little 5	960	4391
Archer County—		
Bridwell Oil Co., Green 3-B	67	1148
Cable Oil Co., Thuman 12	12	992
Archer County (Mankins)—		
British-American, Wilson 2	87	4824
Archer County (Wildcat)—		
C. D. Whitaker et al, Britton 1	*	712
Clay County—		
E. N. Costley et al, McInnes 5-B	6	260
Kingery Bros. et al, Johnson 9	74	1183
Cooke County (Wildcat)—		
Staley & McCullough, A. Judy 1	*	1757
Cooke County—		
Texas Co., Truebenbach 20	69	749
Trumter Pet. Corp., Stacey 11	10	739
Cooke County (Walnut Bend)—		
Sinclair Prairie, McGeorge 13	653	4965
Jack County (Wildcat)—		
B. C. Gilmore et al, Bloodworth 1-B	*	577
Montague County (Nocona)—		
L. A. Conner-W. H. Curry, Reynolds 1	984	4324
Wichita County (K-M-A)—		
L. T. Burns et al, First Nat'l Bank 24	632	3828
S. H. Fagadau et al, Barnes 1-C	*	4492
Potts 1	20	4035
W. H. Hammon et al, Hammon 7	336	4046
Hammon 10	368	4010
Hammon, Hanlon & Buchanan, Hammon 9	584	4070
Hanlon & Buchanan, Inc., Fassett-Tuttle 5-G	276	4057
Fassett-Tuttle 7-G	512	4065
Fassett-Tuttle 9-G	456	4078
W. B. Omohundro et al, Jones 6	520	4100
Texas Co., Thom 5	912	3849
Wichita County—		
Burk Roy. Co., Birk 3	8	806
Birk 4	*	801
L. T. Burns & Long, Gaunt-Clark 21	8	1352
L. V. Hull et al, Daume 7	39	697
Daume 8	*	788
King Oil Co., Harmel 2	5	1817
Montgomery & Woodlief, Weaver 4	*	1254
A. B. Wharton et al, Waggoner Est. 8-B	37	1603
Wilbarger County—		
E. P. Waggoner et al, Waggoner Est. 5-C	14	2387
Young County—		
M. J. Groves et al, Barnett 6	5	584
Thos. D. Humphrey et al, Ragland 3	44	3787

East Texas

Joiner Area—		
Ohio, Burton 8 (61½-ac)	1200	3686
Kilgore Area—		
Kirby Pet. Co., Reddic 16 (80.72-ac)	900	3714
Longview Area—		
T. W. Lee et al, Bumpas 10 (31.6-ac)	2500	3568
B. F. Phillips et al, Everett 4-C	750	3610
Franklin County (Talco)—		
Humble, Penn-Humble 17 (700-ac)	438	4289
Freestone County (Wildcat)—		
C. F. W. Young et al, Simmons 1	*	4055
Gregg County (Willow Springs)—		
Roger Lacy et al, Lacy Est. 1	¶84	7308
Houston County (Wildcat)—		
G. L. Dixon et al, Crownson 1	*	4045
Titus County (Talco)—		
Adams & Lyles, Inc., Myers 1	533	4338

South Texas

CORPUS CHRIST DISTRICT

Aransas County—		
F. A. Gillespie & Sons, Flores 1 (McCampbell)	450	7232
MAR Prod. Co., Mull 1 (McCampbell)	150	7251
Brooks County—		
Humble, McGill 50 (Kelsey)	350	4739
Cameron County—		
Sal Vieja Oil Co. & Pure, Garcia 1 (WC)	*10,307	
Goliad County—		
Tom Graham Oil Co., Wood 1 (WC) Sarco Creek	*	5235
Jackson County—		
American Liberty Oil Co., L. Ranch Co. 8 (West Ranch)	1150	5625
W. S. Boyle, Mauritz 2-B (Mauritz)	*	5675
Mauritz & Stovall 1 (Mauritz)	*	5782
Humble, Mauritz Bros. 1 (WC) Morris & Cummings Sur.	*	6517
Magnolia, West 81-A (West Ranch)	1250	5768
West 83-A (West Ranch)	1100	5573
West 86-A (West Ranch)	1250	5768
West 87-A (West Ranch)	1350	5767
West 89-A (West Ranch)	1100	5574
Superior, Drummond 7 (West Ranch)	1500	5783
Jim Wells County:		
Rodney Delange, McNeil 10 (Wade City)	550	4923
Heyser & Heard, Garcia 2 (Ben Bolt)	650	5342
O. W. Killam, Wade 9 (WC) Wm. Hobbs Sur.	*	5393
Magnolia, Schmidt 1 (Orange Grove)	500	5112
H. R. Smith, Albrecht 1 (Wade City)	500	4814
Nueces County—		
Forest Dev. Corp., Merritt 1 (WC) Sur. 160	*	6599
Gulf Plains Corp., Butts 2 (Stratton)	¶20 & 100	5815
Dryden & Mosely 2 (Stratton)	¶20 & 100	4940
Southern Minerals Corp., Community 1 (WC) Sur. 203	550	6578
W. R. R. Oil Co., State 2 (976) (East White Point)	550	5648
Refugio County—		
Coronado Corp., Michna 4 (GS) (La Rosa)	¶20 & 100	5900
Union Prod. Co., Fox 25 (Refugio-Fox)	75	5884
San Patricio County—		
Midway Victory Oil Co., Floerke 2-A (Midway)	*	5350
Plymouth Oil Co., Morgan 1 (East White Point)	500	5680
Texas Atlas Petr. Corp., Crown 1 (DD 19) (McCampbell)	350	7530
Victoria County—		
S. W. Richardson, Keeran 1 (WC)	*	8430

LAREDO DISTRICT

Duval County—		
Argo Oil Corp., Rodden-Fee 9 (Hoffman)	75	2848
Gov't Wells Oil Co., E. C. Lundell 2 (Piedre Lumbre)	103	1375
Magnolia, D.C.R.C. 6 (132) (Cedro Hill)	¶10	1457
Sinclair 1 (WC) Sur. 510	*	3602
Weil 13 (495) (Hoffman)	¶10	2815
Jim Hogg County—		
Humble, King-Colorado 13 (Colorado)	550	3046
Mestina O. & G. Co. 3 (WC) Santa Rita prospect	*	6012
Sun, N. S. Thaxton 1 (Colorado)	275	3001
LaSalle County—		
Marshall Purvis, Yaeger 1 (WC) Sur. 53	*	756
McMullen County—		
Cities Service, Rhode 1 (WC) Sur. 13	*	3123
Starr County—		
W. R. Davis Co., Slick 10-A (Rincon)	500	4362
Panal Oil Co., Hinojosa 6 (Ricaby)	*	1457
Sun, Olivarez 9 (Sun)	550	5000
Speer 8 (Sun)	375	4968
Speer 1-C (Sun)	450	4989
Webb County—		
O. W. Killam, Brunl 3 (Glen)	163	2186
Magnolia, Volpe-Benavides 39 (Volpe)	75	2466
Transwestern Oil Co., Bruni 3 (Glen)	225	2180

SAN ANTONIO DISTRICT

Bastrop County—		
W. C. McGlothin, Bell 1 (WC) Sur. 35	*	3194
Williamson County—		
C. R. Bonnett et al, Goetz 1 (Thrall)	*	807
Zavala County—		
H. F. Wilcox O. & G. Co., Voigt 1 (WC) Sur. 30	*	4198

*Failures; †Junked; ¶Million cu. ft. gas.

WILDCAT REPORT
New Starts and Completions

ALABAMA

COMPLETIONS

Greene County—L. M. Glasco's (formerly E. C. Johnston) Willis 1, sw sw 11-20n-1e (near Boligee), ran electric log, abnd 2615 ft, Fort Payne chert.

Choctaw County—Union Prod. Co.'s McCorvey 1, se sw 20-9n-2w, elev 114 ft, junked 5558 ft. (Old td 9622 ft, second completion, was drilled to 7520 ft in 1938 and abnd by Joe Modisette.)

CALIFORNIA

FIRST REPORTS

Kern County—DeLanty & Sutton's Burnoel 1, 28-28-22, rig; South Belridge area.

Santa Barbara County—Texas Co.'s Bishop 1, 13-4-29, lcn; Elwood area.

San Mateo County—Wilshire Oil Co.'s Cowell 3, 17-6s-5w, spud; Half Moon Bay area.

COMPLETIONS

Kern County—Republic Petroleum Co.'s 1, 18-32-23, Midway area, 150 bbls daily 16.5-gr, 2465 ft.

Kings County—Tide Water Associated Oil Co.'s Pyramid Fee 1, sec 18-24-18, Pyramid Hills area, abnd 1038 ft.

Tulare County—Trico Oil & Gas Co.'s Newland 3, 21-24-23, Trico area, gas, 2464 ft.

KANSAS

FIRST REPORTS

Douglas County—Kerlyn Oil Co.'s Whedon 1, c ne ne 20-13-20e, dr.

McPherson County—Progressive Oil Co.'s Charez 1, cwl sw nw 26-20-12w, dr.

Rice County—Republic Nat. Gas Co.'s Bean 1, ce½ ne sw 23-19-6w, dr.

Rooks County—Aylward Prod. Co.'s Richards 1, cn½ nw sw 31-10-18w, dr.

Stafford County—Stanolind's Ahnert 1, cw½ se ne 10-22-12w, lcn. Stanolind's Charles "A" 1, cn½ ne se 15-24-12w, spd.

COMPLETIONS

Cowley County—Shawver et al's Widener 1-B, cs½ se nw 11-30-4e, 1 mi ne Rock pool, Mississippi 2825-3125 ft, Arbuckle 2326 ft, bailed 1½ bbls per hr 3226-30 ft, abnd 3245 ft. Foster Oil Co.'s Howard 2-A, ce½ sw sw 8-34-4e, in Arkansas City gas pool, Lansing 2091 ft, Stalnaker 2115-18 ft, 1,200,000 cu ft gas, Layton 2590 ft, hfw 2635-50 ft, Ft. Scott 2963-3080 ft, Mississippi 3329 ft, top Arbuckle 3842 ft, hfw, abnd 3876 ft. Barwick & Sheridan et al's Warren 1, cw½ nw nw 18-35-6e, 7 mi s Rahn pool, Kansas City 2675 ft, Mississippi 3198 ft, abnd 3211 ft.

Ellis County—Gulf Oil Corp. et al's Sanders 1, cn½ sw se 30-13-16w, 2½ mi ne Toulon pool, Arbuckle 3450 ft, td 3458 ft, 312 bbls 36-gr.

Ellsworth County—Cities Service Oil Co.'s Kanak 1, swc 12-16-8w, 8 mi ne Lorraine pool, Topeka 2160 ft, Lansing 2501 ft, so 2789-92 ft, base Kansas City 2814 ft, Arbuckle 2952 ft, abnd 2970 ft. Finston et al's Siemsen 1, cw½ nw se 3-17-10w, s of Ehler pool, Topeka 2638 ft, base Oread 2845 ft, Lansing 2925 ft, base Kansas City 3200 ft, Sooy 3236 ft, Arbuckle 3375 ft, abnd 3390 ft.

Pawnee County—Magnolia Petroleum Co.'s Smith 1, cel ne ne 12-21-16w, 5 mi s Pawnee Rock pool, Anhydrite 938 ft, Ft. Riley 2020 ft, base Florence 2155 ft, base Oread 3350 ft, Lansing 3412 ft, Viola 3694 ft, Simpson sh 3722 ft, Arbuckle 3764 ft, abnd 3787 ft.

SOUTH LOUISIANA

FIRST REPORT

Calcasieu Parish—Hamman Exp. Co.'s Sabine Rice Lands 1, Bayou Chopique, South Edgerley prospect, sec 3-11s-11w, lcn.

COMPLETIONS

Acadia Parish—Vincent & Welsh and E. J. Nicklos, McManus 1, Trilby prospect, sec 21-7s-1w, flowing 18 bbls daily, 3537 ft.

Assumption Parish—Shell's Tatteran Community 1, Amelia prospect, sec 66-16s-14e, abnd 11,278 ft.

Iberia Parish—I. Delcambre's Reynaud 1, Delcambrie area, sec 17-13s-5e, abnd 696 ft.

MICHIGAN

FIRST REPORTS

Allegan County—Tamblyn Dev. Co.'s Brown 1, ne ne 33-1n-11w, lcn.

Barry County—M. Bliss Keeler's Fisher 1, c se ne 32-4n-10w, rig.

Cass County—Schurtz & Prathers' Pullin 1, sw sw nw 14-5s-14w, lcn.

Clare County—American Prod. Co.'s Ebehart 1, c sw 31-17n-3w, rig. Taggart Bros., Inc.'s Woodin-Baughn 30, c sw 19-20n-6w, dr.

Missaukee County—Century O. & G. Co.'s Anderson 1, se se sw 14-22n-8w, dr. Taggart Bros., Inc.'s Quist 29, c nw 22-21n-7w, dr.

Van Buren County—John McLean's Fellows 1, sw sw 22-1s-16w, rig.

COMPLETIONS

Gladwin County—Sun's Cameron 1, ce½ ne se 10-18n-2w, Dundee 3776 ft, pay 3814 ft, td 3841 ft, pb to 3838 ft, 900 ft oil in 5-in in 4 days natural; pumped 30 bbls net 21 hrs after acid first day, 36 bbls next 48 hrs, discovery.

Midland County—C. L. Maguire, Inc., Clark 1, se se se 32-16n-2w, Dundee 3726 ft, Monroe 3960 ft, Sylvania 5114 ft, sg 5114 ft, hfw, abnd 5117 ft.

Muskegon County—Muskegon Dev. Co.'s Doll 1, sw nw se 8-9n-14w, Dundee 2278 ft, Monroe 2320 ft, abnd 2549 ft.

Wexford County—Virgil R. D. Kirkham et al's Whaley 1, sw se se 24-21n-9w, Dundee 4027 ft, abnd 4047 ft.

MISSISSIPPI

FIRST REPORTS

Jefferson Davis County—W. J. (Sid) Richardson's Berry 1, ne 15-9n-19w, rig.

Wayne County—Trico Oil Co.'s (Waynesboro, Miss.) Jones 1, c sw se 33-8n-7w, dk.

Yalabousha County—W. E. Stewart's McRae 1, sw 25-24n-6e, mat.

COMPLETIONS

Holmes County—A. H. Rowan's Eakin 1, c nw se 20-14n-1e, elev 323 ft, abnd 6013 ft, Tuscaloosa. Exchange Oil Co.'s Gwin 1, se 6-16n-1e, elev 130 ft, electric log, abnd 5099 ft, white salty sand.

Scott County—Exchange Oil Co.'s Newell Mineral Lease A-1, nw ne sw 30-7n-7e, elev 411 ft, chalk 3980-5101 ft, abnd 6500 ft, shale.

Yazoo County—Sells Pet. Co.'s Faulkner 1, se ne 34-9n-4w, elev 327 ft, base Midway 6060 ft, abnd 6590 ft, chalk.

MISSOURI

FIRST REPORTS

Knox County—Harris & Holmes' Newkirk 1, nec 11-61n-11w, sd 60 ft. H. A. Black's Schnepp 1, swc 21-62n-10w, mach.

COMPLETIONS

Mercer County—Geo. Moore et al's Moss 1, nw sw se 30-65n-24w, 2½ mi w Princeton, Viola 1725 ft, St. Peter (Wilcox) 1937 ft, Arbuckle 2015 ft, hfw, abnd 2330 ft.

Platte County—Roach-Vincent et al's Dillingham 1, cni ne sw 16-53n-34w, 6 mi ne Platte City, Mississippi 1060 ft, Hunton 1475 ft, ssgas & water, abnd 1485 ft.

MONTANA

FIRST REPORT

Pondera County—R. C. Tarrant's Lang 1, cse se nw 14-31n-5w, 5 mi s and ¾ mi e of Cut Bank fld, mim.

NEBRASKA

FIRST REPORT

Richardson County—I. T. I. O. Co.'s Schaible-Kuttler Consolidated 1, c ne sw 29-3n-16e, mim.

NEW MEXICO

FIRST REPORT

Eddy County—Beddingfield & Walker's Seale 1, sec se 10-20s-27e, lcn.

COMPLETION

Eddy County—Frank Montgomery et al's Kaltenbach 1, nwc nw 24-16s-27e, elev 3634 ft, abnd 2243 ft.

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OKLAHOMA

FIRST REPORTS

Hughes County—Loual Dr. Co. et al's Jackson 1, c sw nw 24-9n-9e, dr.

Okfuskee County—Hayes Dr. Co. et al's McKernan 1, c½ se nw 25-12n-8e, lcn.

Seminole County—Davis et al's Thlocco 1, nw sw nw 30-7n-7e, dr.

COMPLETIONS

Logan County—Keriyn Oil Co. et al's Cavanaugh 1, sw nw 1-15n-4w, 6 mi se Crescent pool, Tonkawa 4278 ft, Dewey 4650 ft, Checkerboard 5275 ft, Mississippi 6105 ft, Woodford 6135 ft, Hunton 6264 ft, Sylvan 6300 ft, Viola 6404 ft, Dense 6422 ft, first Wilcox 6561 ft, second Wilcox 6711 ft, abnd 6736 ft.

Payne County—Comail-Haskins et al's Meyer 1-A, nw se se 17-17n-6e, 3½ mi se Cushing, Prue 2874 ft, td 2897 ft, 24 bbls.

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WEST CENTRAL TEXAS

FIRST REPORTS

Callahan County—W. H. Street et al's Hill 1, John Gillespie sur 340, lcn.

Stephens County—Dean L. Matteson et al's Craighead 1, TE&L sec 1517, lcn.

Callahan County—J. F. West et al's Bowman 1, BBB&C sec 70, lcn for 1950-ft test.

Shackelford County—R. F. Hart et al's Todd 1, B. A. L. sec 10, lcn for 650-ft test.

Tarrant County—J. M. Hickey et al's Baltzelle 1, 100-ac tr, W. M. Scott sur, lcn.

COMPLETIONS

Brown County—H. T. B. Prod. Co.'s Smith 1, nwc s½ sec 3, H. P. Brewster sur 290, abnd 405 ft. A. M. Stalcup et al's Morris 1, W. B. Hester sur, abnd 972 ft.

Erath County—Jackson et al's Taylor 1, W. S. Prater sur A-1029, abnd 3395 ft.

Taylor County—T. S. Hose et al's Bond 1, sec 40, Blind Asylum Lands, Palo Pinto 3298 ft, abnd 4720 ft.

WEST TEXAS

FIRST REPORTS

Glasscock County—Moore Bros. et al's Currie 1, c se sw T&P sec 25, blk 34, T-5-S, lcn for 4200-ft test.

Tom Green County—Ed. Young et al's Pugh 1, 355-ac tr, sec 73, Jas. Elredge sur, lcn.

NORTH TEXAS

FIRST REPORTS

Clay County—Rogers & Ray Dr. Co.'s Groves 1, nec se sec 88, Byers subd, dr 855 ft. L. O. McMillan et al's Watson 1, TE&L sec 2620, lcn 3750-ft test.

Denton County—Amon G. Carter et al's Allen Bros. 1, Stephen Westbrook sur, lcn.

Montague County—Tom Owens & L. E. Hults' Tucker 1, TE&L sec 2836 ft, lcn 7500-ft test.

Wilbarger County—Herbert Oil Co.'s Peters 1, sec 1, BBB&C sur, A-6, lcn for 6000-ft test.

COMPLETIONS

Archer County—E. D. Whitaker et al's Britton 1, W. R. Hensley sur A-165, abnd 712 ft.

Cooke County—Staley & McCullough's Judy 1, Cromwell-Hawley sur A-285, abnd 1757 ft.

Jack County—B. C. Gilmore et al's Bloodworth 1-B, J. F. Franklin sur A-1527, abnd 577 ft.

EAST TEXAS

FIRST REPORTS

Red River County—Joe B. White et al's Kurth Lumber Co. 1, Eliza Smith sur, Allen Mill community, rig.

Rusk County—J. S. Harrold et al's Armstrong 1, nwc 73½-ac tr, M. del Carmel sur, sp for Trinity test.

Shelby County—Superior's Pickering Lbr. Co. 2, B. H. Simpson sur dr. Superior's Pickering Lbr. Co. 3, Thomas Haley sur, mat.

COMPLETIONS

Freestone County—Chas. F. W. Young et al's Simmons 1, 376-ac tr, M. DeCantona sur, elev 503 ft, Austin chalk 3236-3625 ft, Woodbine 4029 ft, abnd 4055 ft.

Houston County—G. L. Dixon et al's Crownson 1, C. G. Cecil sur, elev 302 ft, abnd 4045 ft.

TEXAS GULF COAST

FIRST REPORTS

Fort Bend County—Sam Bashara et al's Alcorn Land & Implement Co. 1, Wm. Stafford league, 6 mi se Sugarland, n Strake 1, same tract, contr depth 6500 ft, lcn.

Hardin County—Jack Frazier's Mills 1, Kountze area, S. B. Turner sur, contr depth 8500 ft, lcn.

Wharton County—Titantic's Goar 2, sec 3, Morris & Cummings sur, Hillje area, contr depth 6000 ft, lcn.

COMPLETIONS

Calhoun County—Ray Ranger and Wynn Crosby Dr. Co.'s Sells Mineral Sub. 1, Olivia area, Sam Houston sur, Carancuhua Bay, Rd Marg 6880 ft, Ft Marg 6972 ft, Frio 7474 ft, showed oil, gas-dist, bottom hole, abnd 9011 ft.

Chambers County—Sun's Smith 1, sec 12, D. L. Broussard sur, 3 mi n Seabreeze fld, flowing 150 bbls daily 32-gr oil 8849-53 ft.

Harris County—John Mayo and Christian-Carpenter Dr. Co.'s Josey Farms 1, Cypress area, Anderson sur No. 24, Cockfield 5980 ft, sw/sd 6142-50 and 6222 ft, abnd 7509 ft.

Montgomery County—Continental's Bender Estate 1, Spring prospect, Decrow sur, Heterostgina 2976 ft, Warreni 4480 ft, Mass Pratti 5057 ft, Hockleyensis 5179 ft, Non-Cockfield 6056 ft, Discorbis Yegua 6253, sw/sd 5280-89 ft, 9⅝-in 10,493 ft, abnd 11,213 ft.

Orange County—Texas' Stark 11, Thomas A-181 sur, 1 mi w Port Neches fld, abnd 7560 ft.

SOUTH TEXAS

FIRST REPORTS

Aransas County—Humble's St. Charles Bay-State 1, 320-ac lse, tr 27, St. Charles Bay, 10 mi n Rockport, lcn.

Bee County—M. D. Dirks' Wolfe 1, 100-ac tr, T. B. Barton sur, 5 mi n Minerals, lcn.

Bexar County—H. L. Bedwell et al's Russell 1, 500-ac tr, Fernando Rodriguez sur, sec 16, 3 mi w Mitchell Lake, 570 ft n Leon Creek, dr 500 ft.

Brooks County—H. H. Howell's Marcello Cantu 1, sh 5-C, La Alameda gr, Mid-Continent farmout, e Rachal, lcn.

Duval County—Henderson Coquat's Southerland Life Ins. Co. B-1, sec 11, George Ball Ranch subd, Santos Flores gr, midway between n and s Sweden flds, dr 4625 ft.

Guadalupe County—Mason Altgelt et al's Lenz 1, 100-ac tr, E. Smith sur, 2 mi sw Elm Creek fld, dr 720 ft.

Jackson County—Barnsdall's Pritchett 1, s 200 ac of 400-ac tr, A. M. Clare sur, A-212, 6 mi n LaWard, lcn.

Live Oak County—Continental Oil Co.'s Cartwright 1, Sandman sur, Houston Oil Co. 1100-ac farmout, lcn.

Victoria County—Fidelity O. & Roy. Co. et al's Keeran et al 1, Martin De Leon gr, 20 mi se Victoria, lcn.

Webb County—Cecil Hagen's Frost (Masterson) 1, sec 7, CCSD & RGNG sur, blk 2, lcn. O. W. Killam's Puig et al 1, blk 34, Edgington subd of Los Albercas gr, 10 mi s Mirando City, 3 mi n Glen fld, ru.

Zavala County—H. F. Wilcox O. & G. Co.'s Voigt 2, sec 14 TWT & P sur, blk A-2, 5 mi ne No. 1, 1¾ mi nw Gilliam 6, lcn.

COMPLETIONS

Bastrop County—W. C. McGlotin's Bell 1, s 100 ac of 416-ac tr, Albert Black sur 35, 2 mi w Sayersville, Sun farmout, temp abnd 3194 ft.

Cameron County—Sal Vieja Oil Co. & Pure's Garcia Land and Livestock Co. 1, Santa Isbell gr, 4630 ft sw line, 3960 ft se line, 10024.55-ac tr, abnd 10,307 ft.

Duval County—Magnolia's Sinclair hrs 1, AB and M sur 510, 2134-ac tr, 16 mi se Free, 7½ mi s Hoffman fld, abnd 3602 ft.

Goliad County—Tom Graham Oil Co.'s Wood 1, Domingo Morris sur, 250-ac lse, ab 25, 1 mi e Sarco Creek fld, abnd 5235 ft.

Jackson County—Humble's Mauritz Bros. 1, Gaines Fig Orchards subd, Morris & Cummings sur, AB-243, 6 mi se Ganado, 1 mi sw Mauritz fld, abnd 6517 ft.

Jim Hogg County—Humble's Mestina O. & G. Co. 3, Fowler & Rankin subd, San Antonio de Baluarte gr, Santa Rita area, abnd 5115 ft.

Jim Wells County—O. W. Killam's Wade Est. 9, lot 7, blk D, W. B. Bode subd, Wm. Hobbs sur, ab-214, n Wade City fld, abnd 5393 ft.

LaSalle County—Marshall Purvis' Yaeger 1, lot 4, blk 4, sur 53, W. H. Wallace subd of Louis Yaeger ranch, abnd 756 ft.

McMullen County—Cities Service's Rhode 1, sw¼ Seale & Morris sur 13, 3 mi n Rhode fld, abnd 3123 ft.

Nueces County—Southern Minerals Corp.'s Community (Bertram et al) 1, sur 203, Paso Anco de Abajo gr, 7-in csg 6578 ft, o sd 6380-6403 ft, o&g sd 6563-78 ft, td 6578 ft, flowed 75.81 bbls 24 hrs, 3/32-in ch, perf 6390-98 ft with 20 shots, opens crude production on e flank Stratton fld.

Victoria County—S. W. Richardson's Keeran et al 1, 2000-ac lse, Martin De Leon gr, ab 74, 9 mi nw port Lavaca, just n Placedo Creek, abnd 8430 ft.

Zavala County—H. F. Wilcox O. & G. Co.'s Voigt 1, James Crabtree sur 30, 303-ac lse, 5½ mi sw Gilliam 6, top Edwards 4112 ft, abnd 4198 ft.

Fifty-Barrel Allowable Sought for Novice Field

States Oil Corporation has requested a minimum allowable of 50 barrels for two of its wells in the Novice field, Coleman County. Railroad Commission proration orders permit production of 31 barrels daily now.

Testimony was presented at a Commission hearing to the effect that the oil could be produced without waste and that these particular wells are probably not in the Novice field, but are from a separate field since production is found at 3600 feet in a saturated section between 27 and 42 feet thick.

NOTES FOR THE Equipment Buyer and User

Rotary Slips

BAASH-ROSS TOOL COMPANY

Designed to combine extreme lightness for easy handling and full strength with a large safety factor for suspending the longest strings of drill pipe, a new unitized type of rotary slips, designated Type "C-U," has been introduced by Baash-Ross Tool Company, 5512 Boyle Avenue, Los Angeles.

The slips consist of three heat-treated, alloy steel body sections joined together by flexible hinge and equipped with long, replaceable liners, and three solid-steel safety loop handles.

The three body sections are joined together to insure that all will set at the same level in the master bushings when supporting the drill-pipe load, in order to eliminate any tendency to crush the pipe. The flexible hinges which join the body sections are designed to permit them to become automatically adjusted laterally and vertically as the pipe load is brought to rest, so that the pipe is gripped evenly by the liners.

Increased operating convenience is said to result from the lightness in weight obtained by coring all excess metal from the body sections and by the correct balance resulting from the location at which the handles are attached to the body sections. The slips are designed to stand firmly without tipping when rested on the rotary table when the drill pipe is being run in or pulled out of the hole. The solid steel handles are hinged to the body sections so that they lie flat upon the rotary table out of the way of the elevators, and are provided with safety loops to protect the hands of the worker. The

Baash-Ross Slips

slips are designed so one body size accommodates interchangeable liners to fit from four to six or more different sizes of pipe.

A new method of retaining the liners in the body sections is employed. Two liners are placed vertically in dovetailed slots on the sides and at the bottom of each body section. The long T-head key, inserted from the top of the body, fits vertically between the liners in the slot in the body to retain them securely in position.

Water Feed Controller

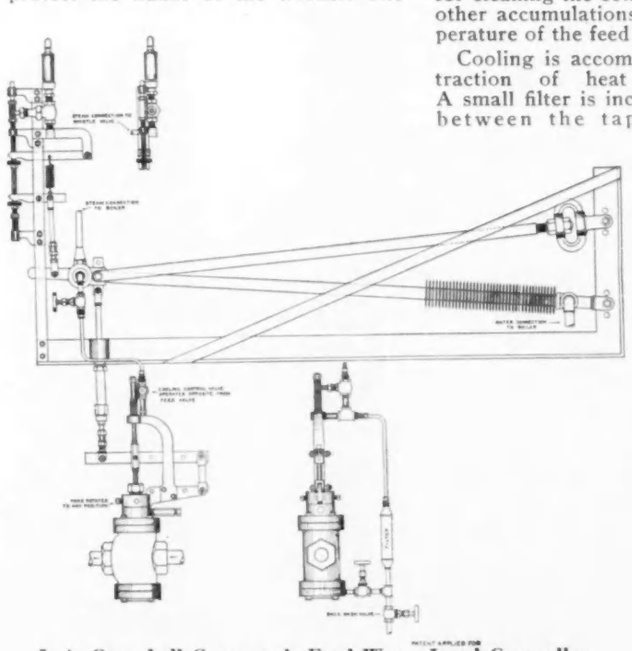
J. A. CAMPBELL COMPANY

A feed water level controller, featuring a small stream of water fed into the control tube at its hot end to increase valve motion through changing the temperature of the entire tube by positive volume control, has been announced by J. A. Campbell Company, 645 East Wardlow Road, Long Beach, California.

The controller, with an accelerator attachment, permits blowing the control tube without throwing the apparatus out of adjustment, affording a method for cleaning the control tube of scale or other accumulations regardless of temperature of the feed water.

Cooling is accomplished through extraction of heat from the tube. A small filter is incorported in the line between the tap-in on the feed valve and accelerator valve. A back-wash valve is provided through which the filter can be washed and freed of scale or other intruding elements.

The lower end of the thermostatic tube on the controller is finned to increase sensitivity. The controller may be equipped with either a whistle or an electric alarm so that a warning is sounded should the boiler pump fail or pump packing become lodged under the valve.



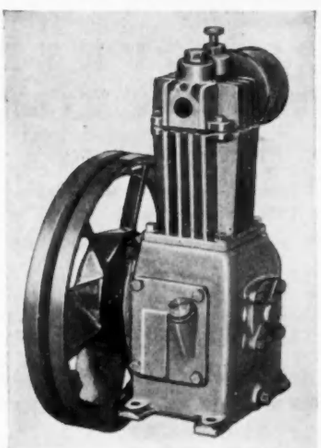
J. A. Campbell Company's Feed Water Level Controller

Compressors

SULLIVAN MACHINERY COMPANY

A new line of small compressor units, designated Type Q, has been announced by Sullivan Machinery Company to supplement its line of portable and stationary air compressors. They are designed for industrial, Diesel-starting, and garage service.

Air-cooled, single- and two-stage,



Sullivan Machinery's Type Q Compressor.

they range in capacity from 2.8 to 45.7 cubic feet per minute, ½- to 10-horsepower, with operating pressures from 100 to 200 pounds, and intermittent 150 to 500 pounds. Smallest unit of the series is 10⅛x14x18 inches high, and the largest 20⅜x19½x25⅞ inches high.

The compressors have cushioned air valves, balanced crankshaft, taper roller main bearings, Lynite connecting rods, semi-steel pistons, positive lubrication, copper intercooler, chrome nickel cylinders and dust-proof crank-case. They are available with automatic starting, and can be had bare, base-mounted or tank-mounted, for V-belt drive from motor or air-cooled gasoline engine. Units for Diesel starting are available with a combination motor and gasoline drive so arranged that the belt can be shifted to the gasoline engine in case of current failure.

Convertible Shovel

LINK-BELT SPEEDER CORPORATION

A 1- to 1¼-yard convertible shovel-dragline-crane, designated Model LS-100, has been announced by Link-

Link-Belt Speeder Shovel

HEADQUARTERS

FOR

OIL COUNTRY

MECHANICAL RUBBER GOODS

Murray specializes in the manufacture of neoprene (synthetic oil resisting rubber) and natural rubber parts for oil tool manufacturers.

•

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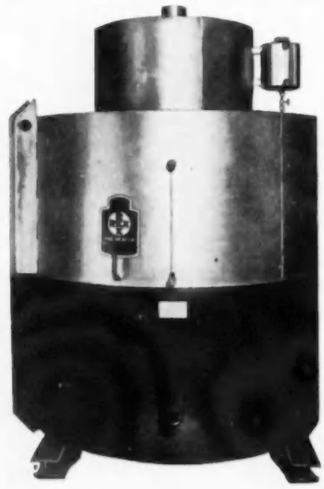
Pays For Itself in Fuel Savings!

Saving in fuel quickly pays for Rex Pre-Heater. 25% to 30% saving reported consistently by users. For complete details see Pages 2146-2147 of your Composite Catalog.



THE REX COMPANY

P. O. BOX 2431 HOUSTON, TEXAS

Mid-Continent Distributor:
The Continental Supply Co.

California Distributor: The Howard Supply Co.

NOTES FOR THE Equipment Buyer and User

Belt Speeder Corporation, 301 West Pershing Road, Chicago.

The machine is controlled by levers and equipped with a new type clutch described as giving the "feel" of the load. Other features are enclosed travel brakes controlled from the cab, enclosed traction gears running in oil, a 72-inch diameter machine-finished roller-path turntable with self-aligning rollers, anti-friction bearings, free-floating center-pin bearings, and welded steel design. The engine is a heavy-duty industrial-type gasoline or Diesel. Track shoes are 24-inch standard, with 30-inch shoes optional equipment; crawlers are smooth, self-cleaning and designed for perfect guiding.

Bearings

THE TIMKEN ROLLER BEARING COMPANY

A new bearing series of the standard SS type has been announced by the Timken Roller Bearing Company, Canton, Ohio. First bearing of the series is 9285-9220, with a cone bore of 3 inches, outside diameter of 6⅜ inches and width of 1-15/16-inches. At 500 R.P.M., the bearing has a radial capacity of 6255 pounds and a thrust capacity of 8710 pounds.

The 9100, 9300 and 90,000 series bearings of the SS type have also been redesigned to reduce the outside diameters and widths of each series while still maintaining the same load-carrying capacities. Two cone bores of 2-7/16-inch and 2-11/16-inch are available in the 9100 series; two different bores of 3-inch and 3-5/16-inch are available in the 9300 series, and one cone bore of 3-13/16-inch in the 90,000 series.

These series, in addition to those now available in the SS type, provide a range of capacities varying in cone bores from ¾-inch to 12½-inch. The SS series are single-row bearings with steep cut and cone angles designed primarily to handle loading conditions where thrust loads are large compared to the radial loads. Their design embodies the primary principle of "on apex" construction to assure true rolling motion and positively aligned rolls to prevent roll skewing. A multiple-perforated cage is designed to retain the rolls equally spaced around the bearing periphery.

Alloy

McKENNA METALS COMPANY

A new grade of Kennametal tungsten-titanium carbide alloy, described as combining hardness with toughness has been announced by McKenna Metals Company, 224 Lloyd Avenue, Latrobe, Pennsylvania.

The new alloy, known as Kennametal K3H, is designed for a tool-dip material for light finishing cuts and for fairly heavy continuous cuts on steel of all hardnesses up to 550 Brinell. Tool tips of this material are supplied in three standard shapes, or in special shapes made to specification. Tools on which tips have already been brazed are also furnished.

Kennametal K3H has a hardness of 79.0 Rockwell C and a strength of 210,000 pounds per square inch on the transverse rupture test.

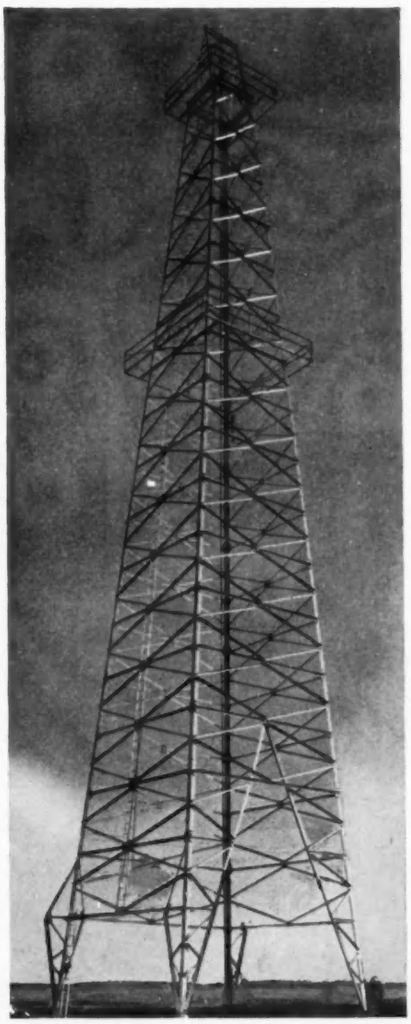
Derrick

THE GLENN E. BREEDING COMPANY

A derrick with arrangement of the diagonal braces designed to reduce the unsupported length of the leg column to give it a greater safe load capacity for a given steel has been announced by The Glenn E. Breeding Company, Key Building, Oklahoma City.

Designated the Fox Diamond Derrick, design of the bracing forms a diamond in the panels with the outer ends of the braces connected to the leg members at a point approximately midway between the girts to provide a brace or support on the leg members approximately every 42 inches throughout the derrick.

Leg joints are staggered by use of two 7-foot members set diagonally opposite, and two 14-foot members as the first four running legs. Subsequent running leg members are 14 feet, except in topping out the derrick where two additional 7-foot members are used.



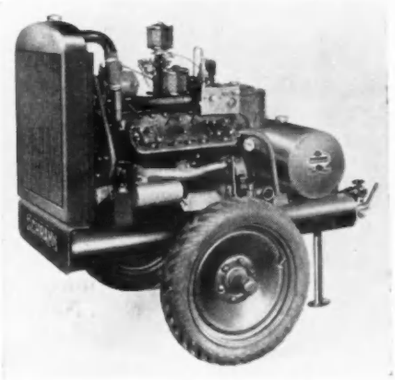
Breeding's Fox Diamond Derrick

NOTES FOR THE Equipment Buyer and User

Compressor

SCHRAMM INC.

A low-capacity portable air compressor, designated Model 40 Fordair, has been announced by Schramm Inc., West Chester, Pennsylvania. The unit features electric-starting equipment, full-force feed lubrication to all parts, water cooling with pumps and radiator, battery, and automatic controls.



Schramm's Model 40 Fordair Compressor.

Rated capacity is 40 cubic feet per minute air delivery at 100-pound gauge pressure; engine is 4 cylinders of Ford V-8, with bore and stroke of 3 1/16x3¾ inches; compressor is 4 cylinders of Ford V-8, with same bore and stroke and speed of 1090 revolutions per minute; air tank is designed in accordance with ASME code for unfired pressure vessels, but not inspected.

Lamps

U-C-LITE MANUFACTURING COMPANY

An addition to its Big Beam line of flash lamps, Model 700, has been announced by U-C-Lite Manufacturing Company, 500 North Dearborn Street, Chicago.

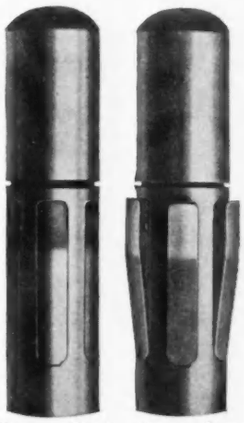
Designed to project a ray over 2000 feet, it has a 6-inch true parabolic silvered reflector, a prefocused bulb and a head focus without adjustments of any kind. It operates on four No. 6 dry cells.

Casing Centralizer

REGAN FORGE & ENGINEERING COMPANY

A casing centralizer to prevent channeling of cement, eliminate weak cement walls and insure a positive water shut-off has been introduced by Regan Forge & Engineering Company, San Pedro, California. It is available for all sizes of casing, for any type of thread or for any size of hole.

The device, which may be used with the regular cementing procedure, consists of a steel body in which six longitudinal slots are included to receive six expandable foot members of drillable alloy metal. This body screws into



Regan Casing Centralizer

the bottom of the casing which is to be cemented. A casing shoe is screwed to the bottom. When the cement plug is run down through the centralizer body it expands the foot members. The plug is tapered at its lower end in a manner calculated to expand the feet gradually. The upper end of the plug is equipped with a diaphragm which is ruptured by the pressure of the cement after landing at the bottom of the centralizer, to permit flow of cement through the plug. After the plug expands the feet to engage the side wall, it seats itself in the shoe, after which the usual cementing procedure is carried out.

Alloy

COLONIAL ALLOYS COMPANY

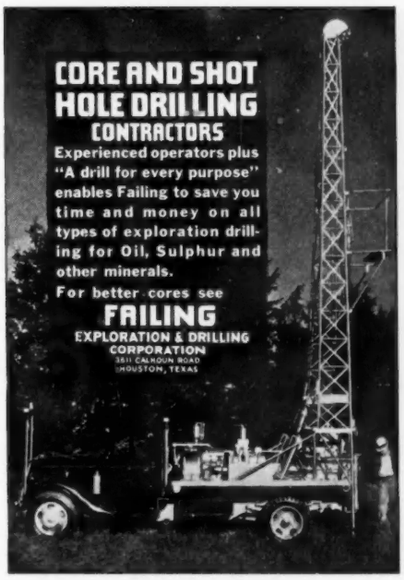
Addition of Colalloy No. 301 to its line of light alloys has been announced by Colonial Alloys Company, East Somerset and Trenton Avenue, Philadelphia.

The material, on the basis of a Tinius Olsen test, showed ultimate tensile strength of 72,110 pounds per square inch, 32 percent elongation in two inches, 57,530 pounds per square inch yield point, 16.5 percent reduction of area in original section, and 109 Brinell.

It is described as lending itself to gas welding, spot welding, seam welding, arc welding, brazing, soldering, chemical fusion welding and reaction soldering; as non-magnetic and non-sparking, and as approximately 66 percent lighter than steel or iron and 70 percent lighter than brass, copper, nickel, bronze or their alloys. It is furnished in sheet, plate, rod, bar, wire, pipe, tubing and extruded forms in a variety of gauges and sizes.

Casing

A. O. Smith Corporation, Milwaukee, has issued Bulletin No. 537 on "How to Save on Casing With Safety." The 24-page booklet describes and illustrates manufacture of casing, gives a graph showing collapse pressure to setting depth for all sizes and grades of casing, and includes design data for casing strings.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STANDCO BRAKE LINING
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Standco Brake Lining Co.
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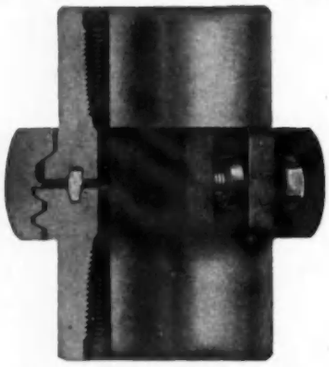

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6,000 lbs. Test

Made in 1½" Size for Blow-out Preventer Hook-Ups and the New Smaller Flow Lines

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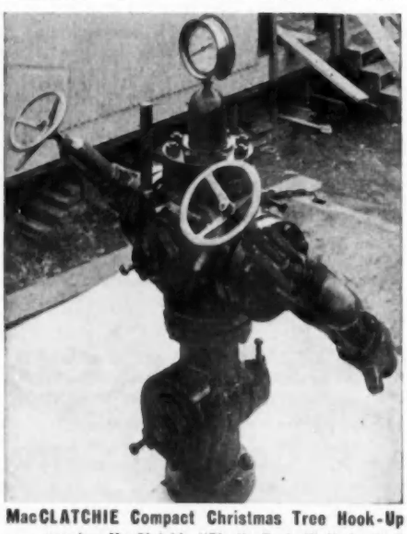


MacCLATCHIE Compact Christmas Tree Hook-Up
. . . uses two MacClatchie "Plastic Packed" Hydro-Seal Plug Valves, (3" or 4") . . . and two MacClatchie Adjustable Flow Beans. 3-point construction of top valve allows flow through EITHER or BOTH beans, or complete shut-off, MERELY BY ROTATING PLUG IN DIFFERENT DIRECTIONS! Full diameter round opening top to bottom for running swabs, light tools, etc., without removing tree from well head. Both valves "Plastic Packed" and lubricated with "Lubricheck" to assure easy turning, repacking and lubricating under pressure WITHOUT CLOSING THE LINE. Bean openings adjustable 1/64" to 1" volume area through venturi tube . . . larger sizes available. Unit easily shipped set up as shown . . . is compact (conserving space) and can be installed on tubing or casing head in a few minutes. Factory tested to 6000 lbs. Working pressure, 3000 lbs. Send TODAY for Complete Information!

MacCLATCHIE MANUFACTURING CO.
COMPTON, CALIFORNIA
Mid-Continent Distributor, HAKE TOOL COMPANY, Houston, Texas
Rocky Mountain Representative, E. C. DILGARDE, Casper, Wyoming
Foreign, GEORGE B. WOODS, 17 Battery Place, New York, N. Y.

NOTES FOR THE Equipment Buyer and User

Lukens Appoints Conway Special Engineer in Petroleum Industry

Martin J. Conway, who has been fuel engineer for Lukens Steel Company, Coatesville, Pennsylvania, since August, 1926, has been transferred to the sales department of the company as special engineer for the petroleum industry.

Born in England and graduated from Oxford University in 1914 with degrees in mechanical engineering and chemical engineering, Conway from 1914 to 1920, except for the war years when his activities were directed toward government work, was in charge of tar distillation and by-products operation for Blaenavon Iron and Coal Company, Blaenavon, Monmouthshire, England. Concurrently, he was a consulting engineer handling design of distillation plants for Fraser & Company, Dagenham, Essex, England.

M. J. Conway

In 1920, Conway joined Pittsburgh Crucible Steel Company, Midland, Pennsylvania, as fuel engineer. In 1923, he joined Wheeling Steel Corporation, in a similar capacity at its Steubenville, Ohio, plant.

From 1926 until recently, Conway has been fuel engineer for Lukens Steel Company in charge of producer gas plants, boiler plant operation, furnace and fuel efficiency, distribution and engineering work of special interest dealing with fuel and metallurgy.

SKF Industries Increases Its Philadelphia Manufacturing Space

SKF Industries, Inc., is constructing a new plant on a 15-acre tract on the Pennsylvania Railroad at Bridge Street, Philadelphia, to be devoted exclusively to the manufacture of antifriction bearings.

The one-story, saw-tooth, daylight-type building contains 226,000 square feet of floor space. Executive, sales, and sales engineering offices will remain at plant number 1, Front Street and Erie Avenue, where wing after wing has been added until practically all of the available manufacturing space has been utilized.

The Atlas Ball Company, a subsidiary, will continue to manufacture balls at Glenwood and American streets. The three plants are conveniently located to each other.

Bethlehem Supply Company Drops International from Name

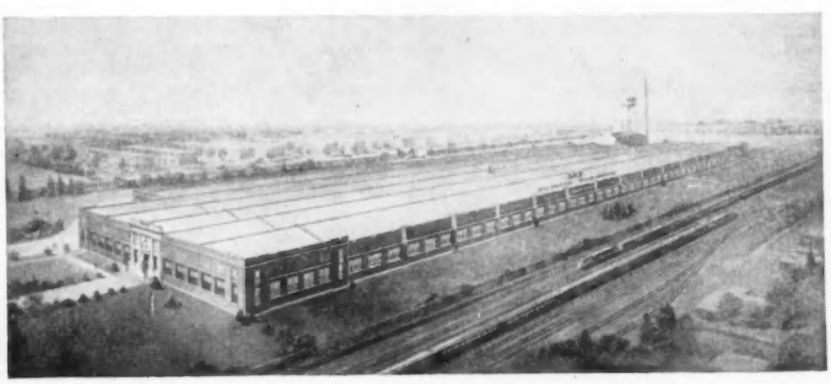
The name of Bethlehem-International Supply Company has been officially changed to Bethlehem Supply Company. The dropping of the middle name, International, marks a two-year growth of the company from an organization with a few scattered supply stores to the present Bethlehem Steel Corporation subsidiary with 36 stores strategically located throughout the Mid-Continent area.

Marmon-Herrington Expands For National Defense Needs

In preparation for the national defense program and to meet an increasing demand for its products for commercial use, Marmon-Herrington Company, Indianapolis, manufacturers of all-wheel-drive motor vehicles, track-laying tractors and combat tanks, has announced plans for doubling the size of its factory.

The program includes an extension to the main assembly plant to double its present capacity, erection of a new building, construction of a spur track into the plant to provide 300 feet of loading docks, and complete modernization of the boilerhouse.

Construction will be of brick and steel and will conform to the monitor-type design of present factory buildings. The addition to the assembly plant will extend this structure to occupy the company's entire frontage of a city block on Washington Street. The work is to be completed by September 1.



New Plant Building for SKF Industries

NOTES FOR THE Equipment Buyer and User

Fluor Awards Contract for New Office, Shop and Warehouse

The Fluor Corporation, 909 East 59 Street, Los Angeles, engineers and constructors to the oil, gas and allied industries and designers and builders of cooling towers, has let the contract for a group of factory buildings at 2500 South Atlantic Boulevard, Los Angeles, to be completed about August 15. The group will contain approximately 44,000 square feet of floor space.

The site for the new plant is approximately 12½ acres. It will be served by a spur of the Santa Fe Railroad.

Of the 42,000 square feet, 10,000 square feet will be devoted to the general offices. Three other buildings will house the cooling tower mill and pattern shop with 20,000 square feet of space, the machine shop with 4000 square feet and the construction equipment warehouse with 10,000 square feet of space.

Regan Forge & Engineering Distributor for Bettis Protectors

Regan Forge & Engineering Company has been awarded exclusive distribution of drill pipe and casing protectors and stabilizers of Bettis Rubber Company, Los Angeles, for the Mid-Continent and Gulf Coast fields. R. A. Hill is manager of the Mid-Continent division with headquarters at 1502 Murray Street, Houston.

To render service at the well for installation of the protectors, the distributor has developed a service trailer to accommodate installation tools and equipment. The first of these trailers is now operating in Texas, and additional units will be available shortly. By means of hydraulic installation equipment, the protectors can be installed on the job. The installation is a part of the service to be rendered by the distributor's engineers in the field.

The Fluor Corporation New Factory Building

Ingersoll-Rand Awarded Atlantic Tanker Pump Contracts

Ingersoll-Rand Company has been awarded contracts for condensers, condensate pumps and boiler feed pumps for a 19,405-ton, all-welded tanker to be built for The Atlantic Refining Company at the Sun Shipyards, Chester, Pennsylvania. When the new vessel is delivered in the summer of 1941, the company's tanker fleet will contain the world's five largest welded ships. A sister ship of the new vessel, the S. S. Robert C. Tuttle, was launched May 11, and will join the Atlantic fleet this month.

Induction Motors

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, has issued a 4-page illustrated leaflet describing its Type CR fractional and integral horsepower repulsion-start induction motors designed for heavy industrial service. Obtainable in horsepower ranges of from ¾ to 3, for use on 110-220 volt, 25-50-60 cycle, single-phase AC lines, the motors are described with special attention given to construction and bearings. Applications are listed and operation is discussed with reference to efficiencies, starting currents and starting torques. The folder is designated No. 3113.

MECHANICAL ENGINEERS' HANDBOOK

By ROBERT T. KENT, *Editor-In-Chief*
and a staff of specialists

Contents of **POWER** Volume: Air; Water; Heat; Combustion and Fuels; Steam; The Steam Boiler; The Steam Engine; The Steam Turbine; Condensing and Cooling Equipment; Refrigeration and Ice Making; Heating, Ventilating and Air Conditioning; Internal Combustion Engines; Gas Producers; Transportation; Electric Power; Power Test Codes; and Mathematical Tables.

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Contents of **DESIGN SHOP PRACTICE** Volume: General Properties of Materials; Iron and Steel; Corrosion and Corrosion-Resistant Metals; Non-Ferrous Metals and Alloys; Non-Metallic Materials; Fabricated Materials; Strength of Materials; Mechanism and Mechanics; Fastenings; Mechanical Springs; Rotating Members; Keys, Cotters, Pins, Tapers and Fits; Bearings and Lubricants; Gearing; Control Mechanisms; Vibration and Noise; Structures and Buildings; Industrial Heating Processes; Forging Practice; Foundry Practice; The Machine Shop; Woodworking; Materials Handling; Mechanical Power Transmission; Electric Motors and Their Control; Miscellaneous Shop Equipment; Safety Engineering; Mathematical Tables.

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Why is the

B-M-W Admore Liner Barrel USED EVERYWHERE?

Briefly, because—

1—The machine work is incomparably accurate, assuring highest efficiency, greatest economy, and longest life.

2—It is adaptable to any type of plunger fitting desired. It is seated in the top of the standard Working Barrel, or in a special Seating Nipple. Or, it may be installed with the B-M-W INSERT PUMP ANCHOR.

There are other advantages, but the above two are the outstanding ones. We shall be glad to send complete data on request.

See our advertisement in the "Composite Catalog."

SUPPLY STORES SELL THEM

All principal B-M-W products are obtainable at the best supply stores: • ADMORE Liner Barrels; • ADMORE Insert Pump Anchors; • TEX TYPE Plunger Fittings and Valves; • NEILSON Tools (Safety Sucker Rod Hooks, Rod Elevators, Sucker Rod Sockets, etc.); • BALLS and SEATS (made for every pumping service) including the 2-WAY NON-MAGNETIC Crown and the TOWER TYPE Ball and Seat; • COLLINS Belt Clamps; • FLUID-LIFTER Pumps; and • NU-TEX Pumps and Valves.

BRADFORD MOTOR WORKS INC.

OIL WELL SUPPLIES

BRADFORD, PA. — TULSA, OKLA.

NOTES FOR THE Equipment Buyer and User

Axelson Manufacturing Company Erects Store at Bakersfield

A new modern field store for Bakersfield, California, has been announced by Axelson Manufacturing Company, located at the northwest corner of Twenty-eighth and "L" streets.

Of stucco construction, the store measures 50 x 70 feet and is one-story in height. The latest type of pump assembly equipment has been installed. Closed shelving protects pump fittings from moisture and dust, and an overhead crane facilitates handling of heavy equipment. Stanley Morish is in charge of the new store.

Axelson's Bakersfield Store

Supply Personals

C. K. Bryce has been elected vice president of Oxweld Acetylene Company, unit of Union Carbide & Carbon Corporation, New York. He was formerly manager of factories.

J. B. Murrin, sales manager for Larkin & Company, Butler, Pennsylvania, has resigned to accept appointment as postmaster at Butler. He is being succeeded as representative in Eastern fields by Roy A. Hindman.

James H. Critchett, vice president of Electro Metallurgical Company and of Union Carbide and Carbon Research Laboratories, New York, and former president of the American Electro Chemical Society, has been appoined a member of the National Research Council. He will serve on the Division of Chemistry and Chemical Technology.

Howard F. Stover, secretary-treasurer of Gaso Pump & Burner Manufacturing Company, Tulsa, and H. A. Wienecke, Jr., sales engineer for the company, spent last week in the Illinois oil fields.

Albert A. Haddox, 49, sales representative for Muskogee Iron Works at Wichita, was fatally injured when a truck struck his car at Sterling. He had been a resident of Wichita since 1926.

Walter R. Swank, former sales engineer for Atlas Supply Company in Tulsa, has resigned to accept a similar position with Bethlehem Supply Corporation. He is making his headquarters at Midland, Texas.

Al Pabst, formerly in the Dallas office of Eastman Oil Well Survey Corporation as advertising manager for the Mid-Continent division, has been transferred to Houston as manager of the Houston division.

V-Belt Drives

The Medart Company, 3538 DeKalb Street, St. Louis, Missouri, has issued a new V-belt drive catalog showing new belt ratings of the company's line. Engineering data in simplified form makes it possible to determine by simple arithmetic and a few minutes' time the correct V-belt drive combination to fit any specific problem. The catalog has been designated No. 111-J.

Shock Absorbers

Tulsa Shock Absorber, Inc., 714 South Boston, Tulsa, has issued a 4-page bulletin on its shock absorbers for pumping wells. The device, offered in polish rod and Pitman beam types, is designed to reduce rod breakage, minimize down-time, and to relieve shock on band wheel shaft, belts, engine and rig front.

Engine Cooling

Chas. J. Franks, Inc., 416 South Kenosha, Tulsa, has issued a new catalog giving specifications, prices and illustrations of its line of engine coolers. The coolers are adaptable for use on any internal combustion-type engine—gas, oil or Diesel—in all sizes up to and including 240-horsepower. They are built to operate from the engine itself, or can be driven by electric motor or small engine if placed away from the engine which it is servicing.

Valves

Merco Nordstrom Valve Company, 400 North Lexington Avenue, Pittsburgh, has issued Bulletin V-109, a 48-page price list covering all types and sizes of Nordstrom valves. It includes a pressure rating index by metals to provide quick determination of the proper valve figure number to meet various conditions of pressure, pipe size, connections and method of operation.

Recording Voltmeters

The Bristol Company, Waterbury, Connecticut, has issued Bulletin No. 543 on round-chart recording voltmeters and ammeters, including data on some of their more common applications. It shows various models available for wall- and flush panel-mounting, and for portable use.

Control Instruments

The Bristol Company, Waterbury, Connecticut, has issued a new bulletin on its line of thermometer and pyrometer controllers for gas, electric and oil-fired industrial furnaces, kilns and ovens. It includes information on various air- and electrically-operated controllers available, automatic control valves, thermometer bulbs and thermocouples.

Chain

Chain Belt Company, Milwaukee, has issued two new bulletins describing its oil field chain belts, centrifugal water pumps and mud conditioners. No. 372 gives brief descriptions of various chain styles and their application, and illustrates the company's Rex mud conditioner. No. 374 offers five rules on "How to Make Your Oil Well Chains Last Longer."

Gotkool
WATER CANS
& COOLERS
GOTT Water Coolers are the convenient way to keep drinking water handy to the worker, protect it from impurities. Their exclusive construction keeps water cool for long periods. Snug fitting large removable top, handy non-leaking push button faucet. GOTT Water Cans for handy field use. Your Supply Store has them, get one today! . . . .
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GOTT WATER COOLER
Made in 3, 5, 8, 10, and 20 gallon sizes.
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WINFIELD, KANSAS
KEEP PURE DRINKING WATER ALWAYS HANDY

Squeaks from the Bull Wheel

New Animal

"Elephant, that's all you know. Ain't I seen them things in the papers every day wid GOP right on 'em? I tell ya, it's a gop!"

Foresight

If you're not very careful you're going to have trouble with a brunette.

That's my wife. What makes you think I'll have trouble with her?

There's a blonde hair on your coat.

His Mistake

So your son had to leave college on account of poor eyesight?

Yes, he mistook the dean of women for a coed.

Get Away From It

Doctor, can you cure me of snoring? I snore so loud that I awaken myself.

In that case I would advise you to sleep in another room.

Potent Preacher

My sermon advocating frugality and thrift was very convincing.

How do you know?

I counted the collection.

In Old Killarney

Have you heard I'm engaged to an Irish boy?

Oh, really?

No, O'Riley.

Seasons Mixed

"A moth leads an awful life."

"How come?"

"He spends the summer in a fur coat and the winter in a swimming suit."

Out With It

Why is that man over there snapping his fingers?

He's a deaf mute with the hic-cups.

Scotch Ancestry?

Are you the nearest relative I've got, Mom?

Yes, dear.

But how about Pop?

Well, you might say your father is the closest.

It Seemed to Fit Nowhere

"Pull yourself together," said the colonel. "Don't you know you're wearing the King's uniform?"

"Oh, that's it," said the recruit, "I knew it wasn't meant for me."

No Nocturnal Interlude

An English tourist was on his first visit to Niagara Falls, and a guide was trying to impress him with their magnitude:

Guide: "Grand!"

The visitor was silent.

Guide: "Millions of gallons in a minute!"

Tourist: "How many in a day?"

Guide: "Oh, billions and billions."

Tourist (looking at the falls carefully, and then in a very calm voice): "Runs all night, too, I suppose?"

Specialist

"I suppose you are going to be a specialist, like so many of the young men nowadays?"

"Yes, doctor. I am going to specialize in diseases of the nose."

"Indeed! Which nostril?"

Wrong Doctor

A young lady was troubled with a boil on her knee which grew so bad that she thought it necessary to call in a physician. She had formed a dislike for the family physician, so her father suggested several others, and finally said that he would call in the physician with the homeopathic case, who passed the house every day. They kept a sharp lookout for him, and when he came along he was called in. The young lady modestly showed him the disabled member. The little man looked at it and said: "Why, that's pretty bad." "Well," she said, "what must I do?" "If I were you," he answered, "I would send for a physician. I am a piano tuner."

Of Course Not

"Two pounds of liver; I'm in a hurry."

"Sorry, madam, but two or three are ahead of you. You surely don't want your liver out of order."

Same One

"Oh, George dear," she whispered when he slipped the engagement ring on her finger, "how sweet of you to remember just the sort of stone I preferred. None of the others were ever so thoughtful."

George was staggered for a moment, then he answered: "Not at all, dear. You see, this is the one I always use."

Best De-appetizer

"I don't see how you can afford to take so many girls to expensive restaurants."

"That's easy; I always ask each girl, just before we go in, if she hasn't been putting on weight."

Noticed It

Er—er—Clarice, there's something been trembling on my lips for the last two months.

So I see. Why don't you shave it off?

One at a Time

But, dearest, if we buy this car, how are we to pay for it?

Let's not confuse the issue by considering two problems at once.

Bride's Dilemma

Do you mean to say there is only one course for dinner tonight — just cheese?

Yes, dear. When the chops caught fire and fell into the dessert, I had to use the soup to put it out.

Modesty

Have you anything to say before I sentence you?

Nothing, your honor, except that it takes very little to please me."

WELLS NEED Cleaning Too!

Clean-Out with a MILLER

Quicker than a cat can wash her kitten, the MILLER Sand Pump cleans-out the sand and sediment that are holding back your oil. Put a MILLER in the hole and find out for yourself why it's the Sand Pump — in World-Wide use.

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32-inch wall thickness in REGULAR Type. ¼-inch wall tubes HEAVY DUTY Sand Pumps.

INTERCHANGEABLE BOTTOMS
To Meet Every Condition

● BAILER BOTTOM
With the Bailer Bottom installed the MILLER is quickly changed to a Bailer giving you a combination of either Bailer or a Sand Pump in one tool.

● SAND BOTTOM
Used when tools are run and when well is shot to quickly remove loose material.

● STAR BOTTOM
Used for cutting the sand loose.

● CHISEL BOTTOM
(In Pump)
With this bottom tightly packed sand can be easily broken in small pieces so it can be picked up in the pump.

Write for Descriptive Folder and Price List

See Pages 1672-73 COMPOSITE CATALOG

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BAKER
SAVE A WELL
CEMENT RETAINER

BAKER
CEMENT RETAINER

CASE STUDY NO. 408

PROBLEM: *To recement section of liner at bottom of uncased hole.*

METHOD: *Run Cement Retainer through 8032' of Open Hole and set near bottom of liner and squeeze cement.*

RESULT: *Cement job 100% successful.*

• DETAILS •

Field: Coalinga Area

Depth of Well: 9375'

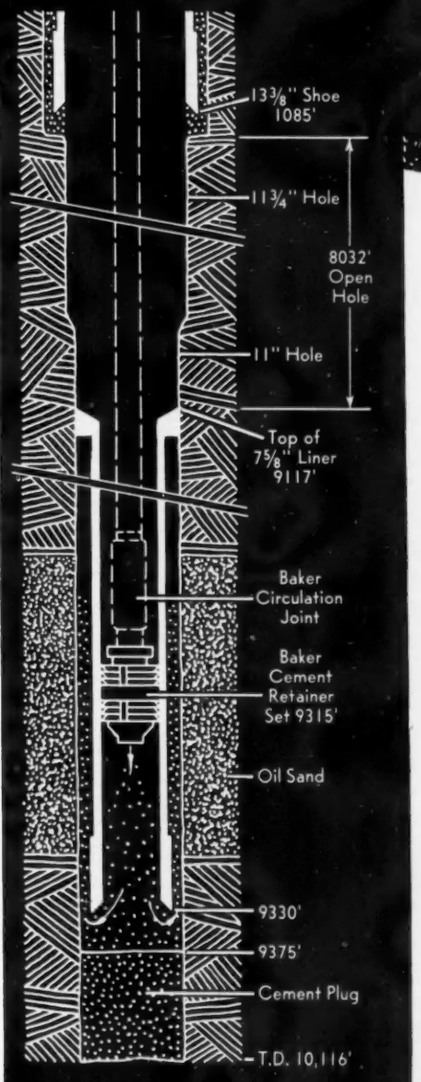
Depth Retainer Set: 9315'

Breakdown Pressure: 2000 #

Final Pressure: 1000 #

Number of Sax Put Away: 75

How Cement Discharged: Around Shoe on bottom of Liner



Showing application of Baker Cement Retainer in recementing liner. Note that Retainer was run through *8032'* of *Open Hole*

THE BAKER CEMENT RETAINER has provided the solution to many Cementing, Well Repair and Well Completion problems confronting the modern operator . . . perhaps it will solve a particular problem confronting YOU. Complete details concerning its many practical field applications will be found in the Baker section of the Composite Catalog . . . also in Baker Broadcast No. 17-A, a comprehensive, 40-page illustrated treatise which will be sent to interested oil men upon request.

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Looking Ahead

WITH THE EDITOR

NEW MARKETS for petroleum products continue to be found. Carbon black has been found to be an effective grinding aid in the manufacture of portland cement, according to the results of research carried out by Columbian Carbon Company's Industrial Fellowship at Mellon Institute, Pittsburgh.

The report of this investigation discloses that a carbon dosage as low as 0.32 percent on the clinker increases the fineness of the cement by 30 percent when the time of grinding is constant, and that the same carbon dosage decreases the grinding time 28 percent. With a 1 percent carbon dosage these improvements become 50 and 34 percent respectively. In terms of power saving and increased output these results are of practical significance. Furthermore, it was stated that cements prepared with carbon present as a grinding aid showed improved strength properties in tensile and compression tests on mortars. These benefits are due to increased fineness of the cement, although there is evidence that the carbon is contributory.

»

OIL BENEATH THE SEA is a subject constantly becoming more important. For example, all along the coast of Louisiana and Texas are numerous shoals and banks 15 to 30 miles out from shore that are thought to cover petroleum deposits. Because of the importance of petroleum, both commercially and from the standpoint of national defense, it would be highly important to the United States to claim ownership of these petroleum deposits, and there is a movement in Congress to assert title to all petroleum found anywhere along the seacoasts of the nation. But can the national government claim ownership of deposits beyond the three-mile limit of territorial jurisdiction?

Precedents are few and far from satisfactory, but John P. Bullington, a lawyer who recently made a report on the subject for the American Bar Association, is to present his views in an interesting article real soon.

»

In anticipation of stimulation of traffic by the World Fairs, the airlines will enlarge their schedules to provide more seats this summer to New York and San Francisco.

The lines meanwhile have had business stimulated by the war's circumvention of American tourist travel in Europe. Officials of the lines expect air-line tourist travel to set new records this year.

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